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ABSTRACT

This dictionary defines information science, computer science, systems theory, and cybernetic terms in English and provides the Swedish translation of each term. An index of Swedish terms refers the user to the page where the English equivalent and definition appear. Most of the 38 references listed are in English. (RAA)

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INFORMATICS WITH SYSTEMS SCIENCE AND CYBERNETICS - CONCEPTS AND DEFINITIONS

INFORMATIK MED SYSTEMVETENSKAP OCH CYBERNETIK - BEGREPP OCH DEFINITIONER

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FOREWORD

One might say that "Computers speak English" or at least most of them require that their managers and the designers of information systems technology are well acquainted with the original professional jargon. Manuals, handbooks, commands and technical terminology are mainly based on Anglo-American vocabulary. This is particularly the case in the field of Informatics with General Systems and Cybernetics, where there is an obvious lag in the standardization and translation into Swedish terms and definitions. To make up for the gap, this forthcoming booklet was written as a methodological tool useful both for practicing systems professionals and for our students in the courses of "Informatics with Systems Science".

As an end product, this compilation of terms, synonyms and definitions resulted after several years of rewriting and iterated elaboration on many texts, glossaries and standard proposals. Hitherto, there has not been any similar English-Swedish effort undertaken to meet the prevailing needs. A limited data processing glossary was released recently (SIS 142). Occasional terms that coexist in our compilation have been barred through indexing by a single star notation (*). However, in most cases the DP glossary has fewer or scanty definitions. Our text is aimed at wider and more general systems use in broader contexts than merely the EDP area.

The nucleas of this text stems from my original work on Systems Design Concepts (Samuelson, 1977) as well as our previous work, which has gained quality improvement through international collaboration (FID/TM, 1970). The author would like to extend his thanks to the international collegues for their input and to A. Bodor for meticulous attention in the production of the index to this book. It is my hope that it will be useful in practice as well as in pre-standardization committees.

Kjell Samuelson

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ABSTRACT — Referat

A short summary of a document.

ABSTRACT, DESCRIPTIVE — Deskriptivt referat

Describes the scope of the material generally but does not summarize the contents.

ABSTRACT, INDICATIVE — Indikativt referat

Contains the conclusions formed in the original document and any other significant facts to make the abstract comprehensive.

ABSTRACT SERVICES — Referattjänst

Announcement devices such as journals or packets of cards which contain abstracts of recently published articles along with bibliographical data to aid the researcher in obtaining the original source material.

ACCESS — Åtkomst

The means by which information is reached in an information system.

A device or method whereby a document may be found.

Permission and opportunity to use a document.

A coordinate for finding a document.

ACCESS, PARALLEL — Parallellaccess

The process of accessing data, where the time required for such access is dependent upon the simultaneous transfer of all data elements from a given location.

ACCESS, RANDOM — Slumpaccess

The arrangement of data in a file without any sequential ordering scheme or rules.

Locating and retrieving an element of data independently of the positioning of previously obtained data.

ACCESS, SERIAL — Serieaccess

The access of data elements one at a time.

The process of obtaining data from, or placing data into storage, when there is a sequential relation governing the access time to successive storage locations.

ACCESS TIME — Accesstid

The time interval between the instant at which data is called for from a storage device and the instant at which delivery is completed, i.e. the read time.

The time interval between the instant at which data is to be stored and the instant at which storage is to be completed, i.e. the write time.

The time interval between the instant a call is made for a data element and the instant when the data is available to be requesting unit.

ACCESSIBILITY — Åtkomlighet

A design feature which affects the ease of admission to an area for the performance of visual and manipulative maintenance.

The speed and ease with which desired information in the required medium can be made available to the user.

ACCURACY — Noggrannhet

The correctness of the output of an information system.

The degree to which information is free from error. Not to be confused with PRECISION. For example, a six-digit number containing an error is more precise but less accurate than a four-digit number that is error-free.

ACQUISITION — Förvärv

The obtaining of informational material for current or future needs.

ACT — Akt, Agera

Act: To actuate; to produce an effect or influence, especially a change in the condition of something. A decision without follow-through actions is a block to achieving potential study payoff. Of course, there are decisions that are made to take no actions in a given situation. In situations of logic, this is simply a recognition that at least for the present there is no net payoff for the actions now possible. The actions may be considered, but rejected. There are two subheadings under the verb "act". "Do" emphasizes performance from the point of view of the individual involved, and "change" stresses the result of the do actions.
Do: To perform; to produce. "Do" actions are of particular interest because they form the bridge between plans and results. From the individual's point of view to do stage is when he moves from behind the shield of the analysis stage and brings his decision out in the open for at least semi-public scrutiny.

ACTION — Aktion, Handling

Action of an individual or system (x) is an event occuring to x that is a potential producer of another event. Thus an action is an active event, one capable of making something else happen to either x or its environment.

ACTION-ORIENTED SYSTEM — Aktionsorienterat system (handlingsinriktat)

An organizational intelligence system should be action-oriented in that it informs managers when actions should be taken and provides some indication of the best action to take. If the system simply provides volumes of reports on a continuing basis, action directives are left solely to the manager; he must sift through the mire of data to evaluate their relevance and applicability.

ACTION SCHEMA (SENSORIMOTOR) Aktionsschema, Handlingsschema

is a plan (a scheme) for performing an organized sequence of actions to perform some specific act, coordinating the information picked up by the sensory system with the necessary motor movements. Both perception and behavior appear to become organized by observing the consequences of action. Because the sensory and motor control images form such an essential component of the memory representation, we combine the two types of images into one, making them sensorimotor control images or sensorimotor schemas. The inclusion of information about the motor movements and the sensory impressions allows the human memory system to avoid the circularity that is found in dictionaries. Human memory representations are not circular because eventually they refer to real motor actions or to real reference objects in the world. Actually, we can find the counterpart of sensory images in dictionaries: dictionaries attempt to avoid the circularity of their definitions by including illustrations in their text and by attempting to describe the sensory images that they believe their readers to have.

* ACTIVITY — Aktivitet

The work or passage of time that is required to pass from one event to another.

ACTOR — Aktör

A person or a group of persons, who initiates action in the expectation of receiving satisfactory rewards. Actors strive to establish relations with objects in three ways:
1. Actors cathect objects, that is, they desire (with feeling) to obtain or avoid them.
2. Actors cognize objects, that is they discriminate between objects and assess their respective qualities.
3. Actors evaluate objects, that is they choose between objects on the merits of present or future expectations of gratifications.
These three modes are interdependent.

ADAPTATION — Adaptation, Adaptering, Anpassning

If the system is to be modified as a result of knowledge gained through training and operational evaluation, attributes have to be built into the system which will enable it to be changed. This holds true particularly of computer programs, personnel organization, and equipment capacities.

ADAPTIVE SYSTEM — Adaptivt system

Adaptive system continues to achieve its objectives in the face of a changing environment or deterioration in the performance of some of its elements.

ADAPTIVIZING — Adaptivering

may take the form of commitment, contingency, or responsiveness planning, depending on whether the knowledge of the future is characterized by certainty, uncertainty, or ignorance. The difference between adaptivizing and optimizing is that the first involves error-correcting processes. That is, courses of action, as well as objectives and goals are continually reviewed and revised as necessary. It is from the process of planning that one derives value rather than from its product.

* ADDRESS — Adress

A coded representation of the destination of data, or of their originating terminal. Multiple terminals on one communication line, for example, must have unique addresses. Telegraph messages reaching a switching center carry an address before their text to indicate the destination of the message.

AGGREGATION — Aggregering

Aggregation is defined as a collection of like things. In an information system, the meaning is extended to include collections of data items at the same level of specificity.

* ALGORITHM — Algoritm

is an effective, fixed step-by-step procedure or defined set of rules that assures a resulting output from a given input within a finite number of steps.

o[illegible]hema for data processing will operate upon the data [illegible]ructure to produce a set of new data or another data structure.

ALPHAMERIC — Alfanumerisk

A system that includes alphabetic and numeric characters and special symbols such as those used for punctuation and mathematical representations.

* ALTERNATE ROUTING — Alternativ(t) rotering/vägval

An alternative communications path used if the normal one is not available. There may be one of more possible alternative paths.

ALTERNATIVE(S) — Alternativ

The means by which it is hoped the objectives can be attained. They may be policies or strategies or specific actions or instrumentalities and they need not be obvious substitutes for each other or perform the same specific function. Quad69

An opportunity to choose among more than one possible option. To be considered, an alternative must be an acceptable potential solution of a stated problem. Among alternatives, it is assumed that all are comparable, or to the degree that they are not, their differences are recognized. Alternatives, may have differences of degree or differences in kind.

ANALYSIS — Analys

Separation of a whole into its component parts; an examination of a complex, its elements, and their relations. The key concept involved is the separation, dissection, or partitioning of a complex into its smaller pieces. The final solution is the summation of these smaller solutions joined in the proper fashion to include the interrelationship of the parts.

Human judgemental process, which may be computer-aided, that results in evaluation, problem solving, and discovery, and that also contributes to adaptation and progress in object systems.

ANASYNTHESIS (Systems Approach) — Anasyntes

Synergism is defined, from physiology, as the cooperative action of discrete agencies such that the total effect is greater than the sum of the two effects taken independently; a more general definition is: the whole is greater than the sum of its parts. Extending this concept leads to anasynthesis. Anasynthesis consists of analysis, synthesis, modelling, and simulation, and is applied to the development of a system. It is performed as a process very rapidly and iteratively: analysis ... synthesis ... analysis ... synthesis ... analysis ..., at both the micro- and the macrolevel in large systems. Through the effect of synergism, there is an outcome that is more logical, more organized, more structured, and more responsive to real-life requirements. This effect of synergism, which produces the analytic and synthetic aspects of anasynthesis, is what is usually meant by the popular term systems approach.

ANNOTATION — Anteckning

Critical description or evaluation of the contents or material.

APERTURE CARD — Fönsterkort

A tabulated or punched card with an open space provided for mounting a piece of microfilm.

APPRAISAL — (Upp)skattring

One matches up bits of information, combines information, eliminates overlaps by reclassification, and evaluates the relative worth of various purposes, diagnoses, and courses of action. The intellectual processes of convergent production and evaluation predominate at this stage.

ASSOCIATOR — Associatör, Associerare

The subsystem which carries out the first stage of the learning process, forming enduring associations among items of information in the system.

ATTRIBUTES — Attribut (egenskap)

Attributes are the properties of object parameters. A property is the external manifestation of the way in which an object is known, observed, or introduced in a process. Attributes characterize the parameters of systems, making possible the assignment of a value and a dimensional description. The attributes of objects may be altered as a result of system operation.

* AUTOMATIC DATA PROCESSING (ADP) — Automatisk Data-Behandling (ADB)

The application of electro-mechanical devices to process data and compute problem solutions, designed to be so interconnected and interacting that the need for human assistance or intervention is at a minimum.

* AUTOMATION — Automation, Automatisering

Theory, art, or technique of making a process more automatic (ADP).

AUTOPOIESIS — Autopoies, Självförnyelse

A new paradigm of inquiry devoted to the study of the holistic aspects of systems. Autopoeitic systems are self-renewing and contrasted with allopoietic systems.

* AVAILABILITY — Tillgänglighet

Is the information available in time to make the required decisions or take the required actions? How frequently does the report need to be prepared? Does the information need to be presented routinely, or could inquiry be used?

The availability of a system is defined as the probability that the equipment will be able to perform its intended function when required. Basically, it is the ratio of satisfactory operating time to the total operating time of the system. Its defining equation is given by

$$\text{Availability} = \frac{\text{MTBF}}{\text{MTBF} + \text{MTTR}}$$

BANDWIDTH — Bandbredd

The range of frequencies available for signaling. The difference expressed in cycles per second (hertz) between the highest and lowest frequencies of a band.

* BATCH PROCESSING — Satsvis bearbetning

The accumulating of transactions or records for a given period, then souting into the same sequence as the master file and processing in one computer run.

* BAUD — Baud

The unit of signalling speed. The speed in bauds is the number of signal elements per second. Since a signal element can represent more than one bit the term baud is not always synonymous with bits per second.

BEHAVIOR — Beteende

A high-level abstraction which refers to an extremely large variety of actions which differ in form, content, duration, and frequency. We must identify and define units of behavior which can be pointed to and directly observed. We have chosen to use an act - a particular bit of behavior occurring at a particular time and place - as the smallest particle of society which is capable of being observed.

BIBLIOGRAPHY — Bibliografi

A list of references to information that is pertinent to a particular subject.

BIBLIOGRAPHY, ANNOTATED — Annoterad bibliografi

A bibliography which contains comments on the various items listed.

* BIT — Bit

Contraction of "binary digit", the smallest unit of information in a binary system. A bit represents the choice between a mark or space (one or zero) condition.

BLACK BOX — Svart box (låda)

The definition of a black box is "operational" or "behavioristic". A black box is a system of infinite detail. We do not ask in ultimate detail how a transformation takes place, but rather observe what does take place. If the input-output relationship observed is sufficiently stable to offer reliable prediction, then that reliable relationship is taken as the black box transformation. The criterion for a suitable black box definition is the same as that for a system definition. The output must be predictable, within the limits of our need, from the input.

* BLOCK — Block

A group of records, words, or characters handled as one unit. It is used especially in reference to input and output.

BROADBAND — Bredband

Communication channel having a bandwidth greater than a voice-grade channel, and therefore capable of higher speed data transmission.

BROWSABILITY — Snabbsynings-/Skumningsförmåga

The ability of an indexing system to lend itself to unsystematic or random searches. This ability is of interest or use to the searcher even though it may not produce a logical answer to the search question.

BROWSE — Ögna

To investigate, without design, the contents of a collection of books or documents.

BROWSING — Snabbsyn

To investigate, without design, the contents of a collection of books or documents. The ability of an indexing system to lend itself to unsystematic or random searches. This ability is of interest or use to the searcher even though it may not produce a logical answer to the search question.

BUDGET — Budget(era)

An operations plan expressly for coordination of resource acquisition and use, reflecting the comprehensive plan and particular program governing it, and generally focusing upon the short range interval. Budgets are assembled to support programs which, in turn, are subordinate to plans. All are ultimately oriented toward the attainment of broad aims, objectives, through specific achievements, goals, under stipulated premises, conditions.

* BUFFER — Buffert, Buffertminne

A store, usually associated with a peripheral device or communication link, which accomodates changes or differences of data rate.

BRUSSELS CLASSIFICATION (UDC) Brysselklassifikationen (UDK)

The Universal Decimal Classification.

BUREAUCRACY — Byråkrati

A hierarchical organization with strictly defined roles and rules.

An organization based on laid-down systems, procedures, and laws, in which any position is more important than the person holding that position.

CAPABILITY — Förmåga

A measure of the ability of a system to achieve the mission objectives, given the system condition during the mission. It specifically accounts for the performance spectrum of a system. Capability expressions are measured of the worth or value of a system state.

The degree to which a system will perform the future jobs and satisfy the constraints, assuming that the system is always available for operation and will never malfunction.

CAPACITY — Kapacitet

Quantitative estimates and extrapolations of system effectiveness throughout the range of expected evolutionary changes, situational contingencies, and rated load levels, expressed as testable hypotheses derived from empirical norms of system performance.

CARRIER — Kommunikationskanal

A communication channel suitable for the transmission of electrical signals, generated by the modulation of an audio wave or other stimuli.

CATALOG — Katalog

A listing of the holdings of an information center containing sufficient descriptions to locate the items. In a card catalog each item is recorded on a separate card and indexed by such terms as subject, author, and title.

CATEGORIZATION — Kategorisering

has certain special advantages:
1. Reduces the complexity of the environment.
2. A means of identification.
3. Reduces the need for learning.
4. A means for providing action.
5. Permits the ordering and relating of classes of events.

CATEGORY — Kategori

A comprehensive class or description of things.

A logical grouping of associated documents.

A class or division formed for purposes of a given classification. In faceted classification special distinctions are made between categories, classes, facets, and phases.

* CATHODE RAY TUBE (CRT) — Katodstrålerör

A cathode ray tube used to display output information in graphic or linear form.

CAUSE/EFFECT RELATIONS — Orsak och verkan-samband

In simple closed systems, knowledge of cause/effect relationships may be complete. Results for every combination of variables can be known from experience or computed because all consequences of action are contained within the system and all causes of action stem from within it. In the complicated open system, however, causal actions often have multiple effects which ramify in different directions and varying distances into the future. Effects within the system may stem from action outside it.

CELLULAR SYSTEM — Cellulärt system

A system which is more general than a network in the sense that its parts may have more than two ends, that is it can be joined by more than two groups of node values to the rest of the system. It is also more restricted than a network in that it is only connected to its "neighbouring cells" where we still have to define what we mean by "neighbour" in this connection. In the general case this is not a trivial question and we leave it for later research work - it is certainly of interest to systems theory. In the more restricted case where the system has intuitive geometrical associations, as is often the situation in physics or engineering systems of "field" problems, "neighbour" can be taken in its intuitive sense and we can then easily describe what we mean by cellularity.

CENTRALIZATION — Centralisering

Another idea which is of significance in connection with system evolution is the centralization concept. A centralized system is one in which a single subsystem or part plays a major or dominant role in the operation of the system.

CENTRALIZATION VERSUS DECENTRALIZATION — Centralisering kontra Decentralisering

In a centralized system, one element or one major subsystem plays a dominant role that may override the other system components. In this arrangement of systems and subsystems, the major subsystem is central to the operation. The minor subsystems are satellite to the central operation. In a decentralized system, the converse may be true; major subsystems are of approximately equal value.

CENTRALIZED COMMUNICATION NETWORK — Centraliserat Kommunikationsnät

is very vulnerable to destruction of a few main switching centers. Loss of the communications capability can render the most complex command and control system ineffective.

* CENTRAL PROCESSING UNIT (CPU) — Centralenhet, Centralprocessor

1. The part of a computer that contains the circuits that control the entire operation of the computer system.
2. The arithmetic/logical unit and the control section of a computer.

* CHAINING — Länkning

A method of linking into a single retrievable unit data items or records that may be located in different sections of a storage medium.

* CHANNEL — Kanal

A communication path for transmission of data between two or more points. Also called a facility, line, link or path.

A row or path along which data, usually in the form of bits, are recorded into a medium.

The horizontal row running across the length of paper tape.

CHANNEL CAPACITY — Kanalkapacitet

A term in data transmission used to express the maximum number of bits per second which can be accomodated by a channel. This maximum number is determined by the band width modulation scheme and certain types of noise. The channel capacity may be measured in bits per second or BAUDS.

* CHARACTER — Tecken

Letter, figure, number, punctuation or other sign contained in a message. Besides such characters, there may be characters for special symbols and some control functions.

CHUNK (OF INFORMATION) Chunk

The smallest identifiable unit of task-required information which would lose its identification and meaning with respect to the task, if segmented further.

CIRCUIT Krets, Förbindelse

A means of both-way communication between two points, comprising associated "go" and "return" channels.

CLASS Klass

A group having the same or similar characteristics.

A major subdivision of a category.

CLASS NUMBER Klassnummer

A symbol applied to a book, etc, indicating the class to which it belongs in the classification system used by the library.

CLASSIFICATION Klassifikation

To group or segregate in classes which have systematic relations; to provide order; the analyzing action in management systems - as problems are first taken apart, to see more detail. Classify emphasizes the purpose of seeking to find similarities and differences through analytis. The identification of such similarities and differences, as well as the attaching of sets of labels to these characteristics, is included under the classify heading.

Reduces the complexity of the material, provides a means of identification by grouping like things together, provides a record of experience, and orders and relates classes of events. Three major characteristics of any classification system are that:
1. Classes must not overlap - they must be mutually exclusive.
2. It must be exhaustive - each item to be classified must be placed in some distinct category.
3. It must be significant (related to some specific goal) and in accordance with some predetermined pattern.

CLASSIFIED INDEX Klassat index

An index characterized by subdivisions of hierarchic structure. An index using displaying genus-species (class-subclass) relationships.

CLASSIFYING Klassifiering

The assigning of informational material into related categories.

CLEARINGHOUSE — Klareringscentral

A single location from which information that originated in more than one place is distributed.

CLOSED SYSTEM — Slutet system

Concrete systems with impermeable boundaries through which no matter-energy or information transmissions of any sort can occur. No actual concrete system is completely closed, so concrete systems are either relatively open or relatively closed.

COLLECTION — Samling

The total information resources available to the users of the information center.

COLON CLASSIFICATION — Kolonklassifikation

A faceted classification scheme developed by S.R. Ranganathan.

COMMONALITY — Gemenskap, Allmängiltighet

This involves the use of the same part for different jobs. It permits a higher volume of this particular part, thus lowering the overall unit cost of these parts.

COMMUNICATION — Kommunikation

The word is derived from the Latin communis, which means common. When we communicate, we are trying to establish a commonness with someone. A giving and receiving of meaningful information, signals or messages by talk, gestures, writing, signals or symbols. It includes the flow of material, information, perceptions, and understandings between the various parts and members of an organization. It has been described as
1. an exchange or facts, figures, graphs, pictures, ideas, opinions, or emotions by two or more persons;
2. primarily to influence behavior;
3. a transmission and reception (including comprehension) of thought, instruction, or information;
4. passing on ideas, information, orders, or instructions in such a way that the recipient understands exactly what is meant.

Is controlled (sensibly ordered and perceived) information. Communication may be an intermechanistic relationship (an interplay of sensible information), where control exists in the relationship. Without control, communication devolves to the conveyance of mere data. It becomes information when a living or nonliving system acts on it, that is understands it. Without control, it cannot be certain whether the transmitted information contains the quality of meaningfulness to the receiver.

The transfer of information as distinguished from the transfer of data. The term message is usually used to represent an amount of information intended as a specific stimulus.

COMMUNICATION LINK — Kommunikationslänk

The physical means of connecting one location to another for the purpose of transmitting and receiving information.

COMMUNICATION MEDIA — Kommunikationsmedia

The study and practice of the impersonal means of symbolic interchange. Included are books, newspapers, magazines, radio, television, remote consoles, displays, mass reports, and other presentational vehicles. Communication media, then are non-personal carriers of data and information.

COMPARISON — Jämförelse

As a subfunction of control, this has to do with the evaluation of completed actions to see how they conform to the plans or standards. The comparison subfunction is carried out by observing data, physical activities, or the status of human and nonhuman resources.

COMPATIBILITY — Kompatibilitet

Degree in which hardware and software of one model computer can be interchanged with hardware and software of another model computer.

COMPLEX SYSTEM — Komplext system

Complex system has five or more internal and nonlinear feedback loops.

Complex system is defined as a system composed of an interconnected set of subsystems.

COMPLEXIDENSE — Komplexidens

The below formalized complexity expression can be divided by putting in the denominator the graph diameter δ i.e. the longest track distance between two remote elements or vertices. This reduces the complexity measure and yields higher precision but in a sense makes the causality less obvious for small systems and again makes shorthand calculation less rapid. Such a fraction can be used to differentiate between hard and loose coupling or e.g. for comparison of two highly expanded flow production-lines, by expressing the inverse of a longest structural span or a sort of density say

$$\text{Complexidense} : \frac{C + 1}{E \cdot \delta} \cdot (E - 1)$$

(for interpretation of the symbol notation see the subsequent definition of complexity on next page 15)

COMPLEXITY — Komplexitet

It appears that it is basically not the amount of elements E, that is most critical but rather the way in which they are interconnected, the number of such connections C, and the connection/element ratio. Complexity is expressed as a function of a group of given elements (E) and their number of connections (C).

$$\text{Complexity: } \frac{C + 1}{E} \cdot (E - 1)$$

COMPREHENSIVE SEARCH — Intensivsökning

A search of current and past information that covers all the material available on a particular subject within the constraints of time and money.

CONCEPT — Koncept, Begrepp

The difference in common usage between image and concept suggests how to define concept. First we note that concepts are not iconic; they do not look like sound like, and so on, what they signify. Second, whereas images help us describe, concepts help us explain. Herein lies the critical difference. Images connote structural properties, but concepts connote functional properties.

A procedure for bringing about a relation; not a set of things. Concepts must be a cognitive process and are used to do things; in general to reconstruct, to reproduce, to stabilize relations; hence amongst other things classes.

Units of a conceptual systems are terms, such as words (commonly nouns, pronouns, and their modifiers), numbers, or other symbols, including those in computer simulations and programs. Relationships are expressed by words (commonly verbs and their modifiers), or by logical or mathematical symbols.

CONCEPTION — Uppfattning, Helhetssyn

The conception stage is used to determine whether or not a need exists for the new system. The need can be recognized by the system design and development group (e.g. the data processing department) or by the organization that the new system is expected to service. In the latter case, the manager involved is usually aware of a need, but is not cerain that a new or improved system is feasible. The conception stage is formalized when the system department and the operational group meet to identify the specific need and to determine whether the system approach supports the goals of the organization.

CONCEPT COORDINATION — Begreppskoordinering

The use of documentation techniques employing analysis and indexing of items in terms of elemental unit concepts (rather than in terms of either hierarchical or free combinations of concepts), thus permitting retrieval of information via the flexible combining (coordination) of concepts during retrieval.

CONCEPTUAL ENTAILMENT STRUCTURE — Konceptuell bildningsstruktur, Begreppsbindningsstruktur

A concept is defined by other concepts. The concept defined may then be substituted for the concepts defining it. One may say that the concept defined thus "entails" the concepts defining it. The structure of the defining concepts is called a "conceptual entailment structure". In more elaborate definitions, sub-definitions may enter, as well as cycles of entailment. This becomes evident if the entailment structure represents not just one definition by an author but many definitions. When directed arrow pointers are used, the arrow tails become entailed, while the arrow heads are concept entailing.

CONCRETE SYSTEM — Konkret system

A system at least two of whose elements are objects.

A nonrandom accumulation of matter-energy, in a region in physical space-time, which is organized into interacting, interrelated subsystems or components.

CONFIGURATION — Konfiguration

A group of machines which are interconnected and are programmed to operate as a system.

CONGESTION — Stockning

Any communication network has a limit to the traffic it can carry. Beyond that limit the network must somehow restrict traffic. Congestion means the condition in which traffic is thus restricted.

CONNECTING — Hopkoppling

The operation of establishing a path from an energy source to a selected object, so that energy may be supplied to the object. A selection operation must furnish information about when a suitable object has been selected and also the location of the object.

CONSEQUENCE(S) — Konsekvens(er)

represent a confirmation or contradiction. Some events that follow the action are regarded by the learner as the consequences of it. This element, too, contributes to the analyst's ability to predict or expect certain actions. The learner inevitably predicts the consequences of actions that he is about to take. If the consequences are favorable, this assists the learner in choosing among alternative courses of action when a similar situation is presented to him.

CONSTANT — Konstant

A value or data item that does not change during the execution of a program.

A single numerical factor which always has the same value within the system considered.

CONSTRUCTIVE SUBSYSTEM STRUCTURE — Konstruerbar delsystemstruktur

A subsystem structure so defined that its properties can be deduced (or "constructed"). Such a subsystem structure will be said to be constructive. A subsystem structure can be checked for workability if, and only if, it is constructive.

CONTRADICTION — Motsägelse, Motsättning

A contradictory condition exists when the system contains two objects, which, if one is true, the other by definition is false.

CONTROL — Kontroll, Styrning

is the evaluation of decision, including decisions to do nothing, once they have been implemented. It involves four steps:
1. Predicting the outcomes of decisions in the form of performance measures.
2. Collecting information on actual performance.
3. Comparing actual with predicted performance.
4. When a decision is shown to have been deficient, correcting the procedure that produced it and correcting its consequences where possible.

CONTROL SYSTEM — Kontrollsystem, Styrsystem

Control efforts can be made much more effective by recognizing three different types of control:
1. Steering-controls. Results are predited and corrective action is taken before the total operation is completed.
2. Yes-no controls. Here, work may not proceed to the next step until it passes a screening test. Approval to continue is required. Quality checks and legal approval of contracts are examples.
3. Post-action controls. In this type of control action is completed; then results are measured and compared to a standard in hindsight.
All three types may be needed to control a department or major activity. But it is steering-controls that offer the greatest opportunity for constructive effect.

An activity can be controlled before it takes place or while it is taking place, but it cannot be controlled after it has been completed. Insofar as a report summarizes past activity it is an evaluation report. Only if the report of past performance is the basis for control of future action may it be considered to be a control report. Interpretive comments are used by most concerns on their control reports to explain deviations from the planned or budget standard.

CONTROLLABILITY VERSUS PREDICTABILITY — Styrbarhet kontra föutsägbarhet

Rational planning for the types of environment evolving in today's world is questionable. Four phenomenon contribute to this conclusion:
1. The closure resulting from selective perception.
2. The self-reinforcing cycle of planning and technology.
3. The recursive nature of richly-joined environments.
4. The irresolvability of conflicting goals.
The alternative is to place emphasis in social design on controllability rather than predictability. Controllability refers to the degree of flexibility, predictability to the deviation from a specified line of behavior. The concept of negative planning is a process for shifting from rational planning to designing flexibility.

CONTROLLED OR CYBERNETIC SYSTEM — Styrt (cybernetiskt) system

is any acting system whose components and their interactions maintain at least one system variable within some specified range or return it to within that range if the variable goes beyond it, despite changes in one or more forces that influence the state or level of that variable. The cybernetic system can also be defined as a goal-oriented system. For some purposes the two definitions can be combined, as when the system variable consists of deviations from the path to some goal and the control consists of returning the system to that path. Nothing about the definition precludes the goals or "preferred states" from changing, in which case we have a dynamically pathed cybernetic system.

CONVERTIBILITY — Konvertibilitet, Konverterbarhet
Omvandlingsförmåga

In many applications compatibility might not be guaranted, while convertibility can often be achieved. Convertibility is usually provided for through conversion, transformation, translation or emulation.

COORDINATE INDEXING — Koordinerad indexering

An index in which items can be referenced by properties grouped according to the user's requirements. Opposed to an index in which every combination of properties is listed individually in the machine before the retrieval request.

An indexing method by which information is located by the manipulation of two or more indexing terms.

COST — Kostnad

All adjustment processes have their costs, in energy of non-living or living systems, in material resources, in information (including in social systems a special form of information often conveyed on a marker of metal or paper money), or in time required for an action. Any of these may be scarce. Time is a scarcity for mortal living systems.

COURSES OF ACTION — Aktionskurs, Handlings(in)riktning

Structurally different behaviors of a subject in a structurally defined environment; these behaviors have one or more common functions. A course of action is purposeful behavior of a purposeful individual or system.

CRITERIA — Kriterier

The means by which an alternative is measured or choosen. A criterion enables the analyst to show consistency in his preference selection. The criterion will illustrate the relative achievement of an alternative in terms of other yardsticks, such as time, cost, or effectiveness. A criterion is a standard by which a judgement can be made about the relative merits of a choice.

For choosing the preferred alternative. The criterion usually relates the objectives and the costs in some manner, e.g. by maximizing the achievement of objectives for some assumed or given budget.

CUES AND CLUES — Vinkar och ledtrådar

Cues are current receipts of information via the senses that help the organism identify a pattern in its environment. Cues assist perception, decoding, or channel selection - depending on the language one prefers.

The communication cueing facility is a generating function. It calls forth data as needed. If the data are adequate, that is, sufficiently informative, the manager makes a decision.

CURRENT AWARENESS — Numedvetenhet, Aktualitetsbevakning

The system by which the announcement of newly published information is brought to the attention of individuals whose fields of interest coincide with the material.

CURRENT AWARENESS SEARCH — Aktualitetssökning

A search of the unpublished and recently published material covering a specific area of interest.

* CYBERNETICS — Cybernetik

The theory of control and communication in the machine and the animal. The comparative study of the control and the internal communication of information-handling machines and the central nervous system of animals and man in order to understand better the function of human and mechanical systems.

Are concerned with a bringing together of the related aspects of multidisciplines to fuse them into a single working discipline. Cybernetics offers one set of concepts that, by having exact correspondences with each branch of science, can thereby bring them into exact relation with one other.

CYBERNETICS AND BIONICS — Cybernetik och Bionik

Cybernetics can be thought of as an attempt to understand organisms through making analogies to machines, and bionics as an attempt to develop better machines through understanding of biological design principles. Cybernetics traditionally has emphasized understanding of a given process per se, while bionics seeks understanding of a given process as a means of generalizing to another situation. Both cybernetics and bionics involve theory, model building, experimentation, and application; they have been compared with the two sides of a coin. In some parts of Europe, bionics is considered to be synonymous with applied cybernetics. Bionics can be defined as the study of living systems to identify concepts applicable to the design of artificial systems; alternatively, it can be defined as the study of systems whose functions have been derived from the study of living systems.

* DATA — Data

A datum is a representation of one term of a message and "data" denotes a set of terms.

Can be classified in three categories:
1. Mandatory data: Data without which no decision can be contemplated.
2. Ancillary data: Data highly desirable when it can be made available for the purpose of refining basic intelligence.
3. Diagnostic data: Data desirable for fault and failure analysis and useful in planning for the future.
Classification of data in these three categories helps one arrive at answers to the two questions, "How much time should be taken to develop decision-making intelligence?" and "How much detail is necessary?"

* DATA BASE/BANK — Databas/Databank

1. A Concept whereby all data for an entire information system are located in a common file rather than separate files.
2. Also called Data-Bank. A set of logically connected files that have a common access. They are the sum total of all the data that exist within an organization.

DATA BASE ADMINISTRATION — Databasadministration

Arbritrator of conflicting user needs; his or her functions also include organizing, monitoring, and re-organizing the data-base system.

* DATA COLLECTION — Data(in)samling

A function of an information system which includes the observation or perception and recording of data on some medium for future processing.

The act of bringing data from its origination points to a central point for further processing.

DATA COMPILATION — Datasamling, Datasammanställning

A collection of quantitative information with a significant internal relationship among the items of the collection, as well as validity for the items as separate units of information.

* DATA MANAGEMENT — Data Management, Datahantering

The task associated with data organization which permits efficient allocation and directory maintenance of data storage assignments.

* DATA PROCESSING — Databehandling

The preparation of source media which contain data or basic elements of information, and the handling of such data according to precise rules of procedure to accomplish such operations as classifying, sorting, calculating, summarizing, and recording.

The production of records and reports.

A systematic sequence of operations performed on data.

DATA REDUCTION — Datareduktion

The process of transforming masses of raw, experimentally obtained data, usually obtained or gathered by automatic recording equipment, into useful, condensed, or simplified intelligence.

The process of transforming raw data into intelligible form by smoothing, adjusting, scaling, and ordering experimental readings.

The application of arithmetic, mathematical, or statistical techniques to obtain or extract only the needed information from a larger amount of related raw data.

DECENTRALIZATION — Decentralisering

To obtain this desired flexibility, human systems must be administered by people. This means that large systems must be partitioned into smaller subsystems which can be effectively administered. We have observed a number of unfortunate cases where systems have been allowed to become too large. This is certainly the case in educational systems. It is rapidly becoming so in medical systems and in industrial systems.

DECENTRALIZED COMMUNICATION NETWORK — Decentraliserat Kommunikationsnät

Solves the problem of vulnerability by utilizing alternate routes. A system of this type is inefficient since the increase in survival probability of such a communications network does not increase proportionally with the number of route miles of the communication system.

DECIDER — Beslutare

The executive subsystem which receives information inputs from all other subsystems and transmits to them information outputs that control the entire system. Of the critical subsystems only the decider is essential, in the sense that a system cannot be symbiotic or parasitic on another system for its deciding. A living system does not exist if the decider is dispersed upwardly, downwardly, or outwardly.

DECIDING Beslutande

An operation used to accept or reject some items of information. One input is the information; another is a fixed reference. The two inputs are combined by an appropriate logical rule to give the output.

DECISION Beslut

The word decision is derived from the Latin root decido, meaning to cut of (de, off; caedo, cut). The generic concept of decision, therefore, is settlement, fixed intention, bringing to a conclusive result, judgment, and resolution. Acts of individuals may be divided into two parts: those which result from deliveration, calculation, and thought; and those which are unconscious, automatic, and responsive. The first results in decisions, but these decisions also embody subsidiary acts which are the latter. Decision-making is "the focal creative psychic event where knowledge, thought, feeling and imagination are fused into action. A decision (is) a course of action chosen by the decider as the most effective means at his disposal for achieving the goals.

The selection of a particular action when several alternatives are presented. The selection of the alternative action is made on the basis of the current situation, an ultimative objective or goal, and experience of similar situations in the past.

The selection of some course of action (or inaction) to attain the objective. There are three imperatives in the process of decision making:
1. Possible actions must be recognized.
2. The results of different actions must be predicted.
3. The order of preference of these predicted results must be assessed.

DECISION AND ACTION Beslut och aktion (handling)

If there is only one action to take when a certain signal or message is received then no decision is called for. The signal and other data which describe the action may be necessary (operative information) for the guidance regarding the detailed action steps involved. If, as is more common, several alternative courses of action are available then one of them has to be selected. This is to say that then decision has to be made. Which of the alternatives to chose depends on which is best with respect to the objectives of the decision-maker. This depends on the expected outcome of the action taken which, in turn, will be dependent on the state of nature which can be expected to prevail at the time when the action is implemented. Decision theory studies how to design strategies, that is, rules for selecting courses of action depending on received messages (indicators) about observations of the state of nature or about outcomes of experiments. Thus, the strategy descriptions are used as directive information which directs, or guides or influences upon, the processing of the incoming messages about the state of nature (which messages thus appear as operative information).

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Decision and Action — Beslut och aktion (handling)

A decision leads to an action, or absence of action. We may view the life of an individual, or of an organisation, as a sequence of problems, decisions and actions. In order to make these decisions, it is necessary to identify certain features of the problem. This recognition process can be considered to be the operation of obtaining information from the environment, a task of communication. These structures provide some understanding of complex situations, an understanding which forms an important part of the decision-making process.

DECISION CYCLE — Beslutscykel

Making a decision is only one aspect of what might be called a decision cycle. Such a cycle has the four steps; decision making, implementation, evaluation, and recommendation.

DECISIONING/DECISION-MAKING — Beslutsfattande

All decision problems contain the following elements:
1. A set of alternative actions the decision-maker might select.
2. A set of conditions which reflect the possible environment in which the decision is to made, often called states of nature or states of the world.
3. A set of outcomes which may result, depending upon which action is chosen and which of the environmental conditions do in fact exist at the time the action is taken.
4. A value or utility to the decision-maker resulting from the outcome.

Intelligent use of information by an organism or "cybernetic machine", involves the following:
1. Selection of appropriate information (including initiation of adequate commands to obtain such information.
2. Comparison with previously obtained information.
3. Ordering of actions (both overt and covert) based on a system of preferences and prognosticated results.
The "machine" is necessarily goal-directed, and the system of goals and its associated manipulating techniques will affect all the above processes.

DECISION PROCESS — Beslutsprocess

is a crucial element of the information processing system. The term is used in the broadest possible sense to encompass all decision-making related to the control of the physical system. Decision processes can function with the aid of much or little information; with information which is accurate or distorted, timely or outdated. The information upon which the decision process depends (all of the information available to it) is contained in images. The decision process has not direct contact either with the physical system or the environment.

DECISION SEQUENCE Beslutssekvens

There is no reversibility in many important decision systems. Decisions must be based on the best possible predictions of future expectations. A rational decision process should include the consideration of sequence that permits maximum flexibility with respect to an evolution of both objectives and actions in a quasipredictable world.

DECISION SUPPORT Beslutsstöd, Beslutsuppbackning

The level of risks depend upon the knowledge of the situation:
1. With perfect or near perfect knowledge the decider may act with certainty.
2. With imperfect knowledge and known risks his decisions may be insured.
3. With imperfect knowledge and unknown risks he may take one of three courses:
a. Undertake additional learning.
b. Undertake forced action.
c. Take no action.
Whereas decisions 1, 2 and 3a may be rational and based upon experience, education and expected satisfactions, forced decisions may be irrational and based upon tradition, bias or circumstances or be ordered by a higher power.

DECISION UTILIZATION Beslutsnyttjande

A highly experienced foreman might know all the rules and regulations that apply to his unit of operation, and always be able to respond appropriately, but this activity is not organizational decision making, it is decision - utilization. The decisions had already been made, and the foreman merely applies them. However, effective decision making will depend upon effective decision utilization. There is a tendency to confuse decision making with decision using.

* DECODER Inkodare, (Avkodare)

The subsystem which alters the code of information transmitted to it through the input transducer or the internal transducer into a "private" code that can be used internally by the system. A gamma code is a symbolic language used by systems which have decoder and encoder subsystems that alter the code on the input markers to a different one on the output markers by comparing the input to a stored thesaurus of information and selecting the output from it. This sort of symbolic information transmission is ordinarily dealt with when thought and communication are discussed in the social sciences.

Function for interpreting a set of words or symbols before the idea becomes part of one's mental set.

DEGREE OF RISK Risknivå

The amount of chance a person is willing to take in making a wrong decision: it is inversely proportional to the quantity of information available. Also referred to as Probability of Error.

DELETION — Radering, (Ut)suddning, Makulering

A data record that is taken entirely out of a data file

DEPENDABILITY — Beroende(grad)

Dependability is a measure of the system condition at one or more points during the mission, given the system condition at the start of the mission. Dependability is usually stated as the probability that the system will enter and/or accupy any one of its significant states during a specified mission. If during a mission it is feasible to repair the system, then dependability will include the effects of the repair capability on mission success.

DESCRIPTOR — Deskriptor

A word, phrase, or group of words used to identify a document by actually describing the contents of the text. Descriptors are those properties of an item which are selected for the index entries referring to that item. For example, if the item is a book, the descriptors will between them represent the main subject matter and features of the book.

DESIGN — Utformning, Formgivning

To map out in the mind; to plan mentally; to conceive of as a whole (e.g. system); to invent.

Inventing, developing, and analyzing possible courses of action. This involves processes to understand the problem, to generate solutions, and to test solutions for feasibility.

In the case of system design the model comes first, sometimes in the form of and always playing the role of a set of blueprints from which a system will be built, or implemented, or deployed - whereas in the case of system analysis, the model is derived from an existing system.

In the very general case a designer is asked to design a system so that its output is some assigned function of its input. "Being a good designer" implies that he embodies a correspondence between the set of systems demanded of him and the set of drawings on his board.

Design is thinking behavior which conceptually selects among a set of alternatives in order to figure out which alternative leads to the desired goals. Another characteristic is generality, or, as many would put it, methodology: the designer strives to avoid the necessity of repeating the thought process when faced with a similar goal-attainment problem by delineating the steps in the process of producing a design.

DETERMINISTIC SYSTEM — Deterministiskt system

A system revealing completely predictable dynamic behaviour.

DEWEY DECIMAL CLASSIFICATION Deweys decimalklassifikation

A classification system for books and other documents whereby all knowledge is divided into ten main classes, each designated by a three-digit number; subdivisions are noted by numbers following a decimal point.

DIAGNOSIS AND SYMPTOMS Diagnos och Symptom

A complete decision cycle consists of three stages:
1. Identification of symptoms
2. Diagnosis
3. Prescription

Prescription is decision making - the transformation of information into instruction - which we have considered in detail. Diagnosis is what is involved in developing explanatory decision models. A symptom is a deviation of a system's behavior from what is considered to be "normal", e.g. a fever is an abnormally high temperature. Blood pressure may be above or below the normal range. Similarly, when inventories become larger than normal, it is a sign of something wrong. Costs lower than usual are also symptoms but not necessarily of something wrong. It is possible to go even further in symptom identification by dealing with presymptoms. A presymptom is a predictor of a future symptom, e.g. when a person says that he feels as though he were going to be ill, he has observed a presymptom. These are not mysterious premonitions but explainable phenomena. Normal behavior is not fixed but fluctuates within a range, a range that defines it.

* DIAGNOSTIC PROGRAMS Diagnostiska Program, Diagnosprogram

These are used to check equipment malfunctions and to pinpoint faulty components. They may be used by the computer engineer or may be called in by the supervisory programs automatically.

DIAGNOSTICS, SYSTEM (System)diagnostik

Rather than checking one individual component, system diagnostics utilize the whole system in a manner similar to its operational running. Programs resembling the operational programs will be used rather than systematic programs that run logical patterns. These will normally detect overall system malfunctions but will not isolate faulty components.

DIAL-UP Uppringning

The use of a dial or pushbutton telephone to initiate a station-to-station telephone call.

DICHOTOMY Dikotomi, Tudelning

A division into two subordinate classes, for example, all white and all non-white, or all zero and all non-zero.

DICTIONARY — Lexikon

A standardized list of terms used to specify those words to be used for indexing documents.

DIRECTIVE INFORMATION — Direktiv information

Directive information, being transmitted from a central authority, outside the model system, but occurring at infrequent instants.

* DISK PACK — Diskpack(e), Skivpacke

A portable set of magnetic disks which may be removed from the disk drive unit, allowing another set of disks to be placed on the unit.

DISPLAY MEDIA — Presentationsmedia, Skärmmedium

The medium upon which an information output is presented either for human or machine use.

DISTRIBUTED COMMUNICATION NETWORK — Distribuerat kommunikationsnät

is a more efficient system with a high degree of survivability and availability. If the initial link-to-node ratio is great enough, the operation of the communications network will continue even if a portion of the system is destroyed, but at a decreased capacity.

DISTRIBUTED SYSTEM — Distribuerat system

Each department maintains its own data base and processing procedures for its own needs but still provides for particular information to flow throughout the entire organization.

* DOCUMENT — Dokument

Any instrument (medium) having recorded data, regardless of its physical form or characteristics.

* DOCUMENTATION — Dokumentation, Dokumentering

The preparation, recording, handling, and distribution of informational material.

DOWN TIME — Avstängningstid

That portion of Calendar Time during which the item is not in condition to perform its intended function.

The time during which a computer is malfunctioning or not operating correctly due to mechanical or electronic failure as opposed to available, idle, or stand-by time during which the computer is functional.

DUPLEX(ING) — Duplex

The use of duplicate computers, files or circuitry, so that in the event of one component failing an alternative one can enable the system to carry on its work.

* EDGE-PUNCHED CARDS — Kantstansat kort, Marginalhålkort, Kanthålkort, Kantstanskort

Cards notched on their edges to encode data for later retrieval.

EFFECTIVENESS — Effektivitet, Totaleffectivitet

Position on effectiveness scale assigned to each alternative (by measurement). Effectiveness scale is the scale indicating degree of achievement of goal.

EFFECTIVENESS VERSUS EFFICIENCY — Totaleffektivitet kontra Deleffektivitet

We are differentiating between decision alternatives where effectiveness is involved (strategies), and decision alternatives where efficiency is involved (tactics). A strategic problem can be divorced from tactical considerations when the worst tactical result for the best strategic possibility is better than the best tactical result of any other strategic possibility.

As usually in systems theory, effectiveness is a measure of how well the corporate ultimate goals are fulfilled, rather than just how much is being produced in local work stations (efficiency, productivity).

EFFECTIVENESS SCALE — Effektivitetsskala

Scale indicating degree of achievement of goal.

EFFICIENCY — Deleffektivitet (Produktivitet) Punkteffektivitet

is measured either as
1. units of output obtained by a specified input or
2. units of input required to obtain a specified output

A strategic plan can usually be conducted in a number of different ways. These operational-level alternatives are tactics. The relative value of tactical choices are rated according to their efficiency - the degree to which an operation accomplishes the intended economic effort.

A system's efficiency can be determined as the ratio of the success of its performance to the costs involved. A living system constantly makes economic decisions directed toward increasing its efficiency by improving performance and decreasing costs.

ELEMENT — Element

Element is the simplest functional part of a system. It can be mechanical such as gearing, or electronic such as an amplifier stage containing one tube, or equivalent transistor, and its associated electronic components.

ELEMENTARY MESSAGE — Elementarmeddelande

Consists of the identification of the system point, the moment of time, and measure of one of the state variables of the system in the point as well as identification of the kind of this state variable. Notice that: While an elementary message has a certain information content, or semantic content, nothing smaller than an elementary message has.

EMERGENCY — Nödläge, Nödsituation

Whatever is necessary to repair an existing malfunctioning element of the system.

EMPIRE BUILDER — Imperiebyggare

The type of person who seeks personal power, prestige, and recognition through authority and control to enlarge his domain.

* ENCODER — Omkodare, (Kodare), Utkodare

The subsystem which alters the code of information inputs to it from other information processing subsystems, from a "private" code used internally by the system into a "public" code which can be interpreted by other systems in its environment.

ENGINEERING DESIGN — Ingenjörsmässig utformning

The term "engineering design" is used in the broadest sense, considering that design must begin with a recognition of a need and proceed through the following phases:

1. Conceiving of solutions
2. Choosing at least one promising one
3. Developing new sources of information, and techniques
4. Organizing production resources
5. Management of the resources
6. Distribution of the product
7. Disposition of the waste.

ENTROPY — Entropi, Oordning

A measure of disorder in a system. The tendency is for a system to settle down to a uniform distribution of its energy, therefore at maximum entropy all is uniform and the system contains no information.

ENTRY — Ingång, Ingångsterm

A record of a document in a catalog, list or index.

A posting.

ENVIRONMENT — Omgivning, Miljö

Environment is the suprasystem minus the system itself. The entire environment includes this plus the suprasuprasystem and the systems at all higher levels which contain it. In order to survive the system must interact with and adjust to its environment, the other parts of the suprasystem.

The system is embedded in a set of environments - physical, social, political, economic, and technological. These environments comprise a supersystem with which there are strong, highly complex interrelationships. The environments are a source of information and constraints concerning the use of the system, and of technology which must be considered in the design, development, and operation of the desired system.

EQUIFINALITY — Ekvifinalitet

expressing the fact that in open systems the same final state or result can be reached from several starting points, and by means of different causal factors and action courses along separate routes. It implies that algorithms become uninteresting in computer utilization compared to heurithms and other pragmatic processing orders.

EQUIPMENT — Utrustning

One or more units and assemblies, subassemblies, and parts connected or associated together (including, all necessary cabling and accessories) which perform an operational function (e.g. radio receiving set, radar set).

EVALUATION — Utvärdering, Evaluering

The actual accomplishments are compared with objectives, plans, and schedules, and evaluations are made of the differences.

Ongoing human assessment of systems performance based on and subject to continuing corrective feedback from systems testing, with such assessment conducted in the context of operationally defined standards of systems performance in relation to available resources in a changing systems environment. This definition is oriented toward scientific systems evaluation as distinguished from predisciplinary forms of systems evaluation, including the nonscientific varieties. It highlights the evolutionary nature of systems evaluation with respect to available resources in a changing environment.

EVALUATION CRITERIA — Värderingskriterier

Performance standards through which management can have a valid measurement to evaluate the new system's performance.

* EVENT — Händelse

A point in time that can be identified with the achievement of some discrete aim. It may represent the beginning or ending of an activity.

EVOLUTION — Evolution, Utveckling

With few exceptions, adaptive evolution involves a gain in structural complexity, measured in terms of negative entropy or information content.

There is an analogy between organisational systems and biological systems in which messages are sometimes carried by chemicals, sometimes by nerves. Creatures low down the scale of evolution rely upon endocrine systems which communicate slowly by diffusing chemicals throughout the organism. The higher orders have evolved nervous systems carrying messages very quickly between specific sense-organs and specific effector-organs. Nervous systems evolved in two stages: first the nerve-fibres for carrying the signals and, later, the brain where messages are processed and exchanged. Is there not a parallel in the evolution of organisations? With the arrival of the computer, the analogue of a rudimentary brain, we are likely to see rapid changes in organisations. We must watch them zealously and control their development.

EXHAUSTIVE SEARCH — Uttömmande sökning

A complete search that covers everything current and past that was ever concerned with the subject being investigated.

* EXPANDABILITY — Expanderbarhet, Utbyggbarhet

How can the system be made open-ended, in order that it can be expanded at a later date to accomodate problem areas not covered by the present systems effort?

EXPERIENCE — Erfarenhet

Experiences are a product of environment as well as of past actions; many are also internalized in memory.

EXTENDIBILITY/EXTENSIBILITY — Tillbyggbarhet, Extensionsförmåga

Capability of being extended.

FACETED CLASSIFICATION — Fasetterad klassifikation

Classification schemes whose terms are grouped by conceptual categories and ordered so as to display their generic relations. These categories of "facets" are standard unit-schedules and the terms, or rather the notation for the terms from these various unit-schedules, are combined at will in accordance with a prescribed order of permutation or combination.

FAIL SOFTLY — Mjuklandning

When a piece of equipment fails, the programs let the system fall back to a degraded mode of operation rather than let it fail catastrophically and give no response to its users.

FALL-BACK — Uppbackning, Reservfunktion(er)

Backup mode of, information processing invoked during degraded operations, ranging anywhere from minor system malfunction to complete system failure.

FALL-BACK, DOUBLE — Dubbla reserver

Fall-back in which two separate equipment failures have to be contended with.

FALL-BACK PROCEDURES — Uppbackningsrutiner

When the equipment develops a fault the programs operate in such a way as to circumvent this fault. This may or may not give a degraded service. Procedures necessary for fall-back may include those to switch over to an alternative computer or file, to change file addresses, to send output to a typewriter instead of a printer, to use different communication lines or bypass a faulty terminal, etc.

FALSE DROP — Falskt utfall, Felutfall, Brus

In a mechanized information storage and retrieval system, material that is not pertinent to the subject being investigated, but that is included along with the pertinent material. Also referred to as noise.

* FEASIBILITY STUDY — Förstudie, Genomförbarhetsbedömning

or preliminary analysis is concerned with three areas:
1. The characteristics of the present system or operating environment.
2. Consideration of whether a new system should be developed or the present system should be revised.
3. Whether the proposed system is viable for the sponsoring organization.

FEEDBACK — Återkoppling, Återföring, Returnering, Returmatning

There are two main forms: negative feedback, which is built into the design of a regulating mechanism to produce corrective (positive) effects; and positive feedback, which is a manifestation of oscillation or chaos in what otherwise should be a regulated system. Usually, when the term "feedback" is used, it is understood that negative feedback is what is meant. Negative feedback is thus a product of output which regulates further input. Feedback utilized to apprehend and enhance the normal flow of input information sometimes is compared to a control mechanism.

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Feedback — Återkoppling, Återföring, Returnering, Returmatning

The system output is sampled, measured, and fed back to the input with subsequent modification, if necessary, of the output. Feedback is especially important to the control mechanisms of organisms and machines, and it provides one of the major bases for cybernetics. Feedback systems are typically called closed-loop systems. Systems without feedback are called open-loop systems. These terms should not be confused with open and closed systems, respectively.

Feedback and evaluation are essentially the same in concept. Both involve the analysis of the data gathered in the measurement, or result, phase of the cycle. Using this analysis, certain actions are then taken, based on some form of decision criteria.

FEEDBACK DELAY — Feedback-försening, fördröjning

1. Feedback is the control of inputs as a function of output.
2. Storage is that property of systems which permits the delay of outputs beyond the minimal response time of the system.
3. Memory is the storage of signal inputs.

FEEDBACK INFORMATION — Återförd information

Furnishes data to the individual about the appropriateness of his behavior with respect to the situation in which he is operating. Feedback information, measures the effectiveness of the actor's response to feed-in information; it tells him whether he has selected from his normative, information, and attitudinal storage systems the correct response pattern, and also whether the selected response pattern is achieving the anticipated results.

FEEDFORWARD — Frammatning, Förbikoppling

The difference between feedforward and feedback is that in feedforward, information about the conditions prevailing is not obtained directly from a controlled variable. Examples are:
1. Regulation of the temperature inside a building from a measure of the outside air temperature.
2. Control of the size of a heating-fuel order by means of an average daily temperature record.
3. Introduction of additional complexity into a circuit by a designer anticipating a particular class of malfunctions. Anticipation is the heart of the feedforward mechanism.

FEED-IN (Information) — Inmatning, Införing(-sinformation)

Furnishes data to the individual about the characteristics of the situation in which he is operating. It defines for him the objects that exist within the environment, their configuration into sets, and the patterns of the events that are occurring within the situation. These data act as stimuli for action or response on the part of the actor.

* FILE — Fil

An organized collections of data directed toward some purpose.

A logically or physically related group of data records.

A set of records stored together in a computer system. A data base bank will generally consist of an assembly of files.

FILE DIRECTORY — Filregister

A detailed discription of the format and characteristics of a file, including such things as record format, field content, sequence of data elements, etc.

FILE INTEGRITY — Filintegritet

A term generally used in records retention to mean that all records are in their proper location; thus, file integrity is lost when records are misfiled.

* FILE MANAGEMENT — Filhantering

The development and use of specific rules, procedures and methods for creating the file, updating it, and retieving information from it.

* FILE, MASTER — Huvudfil

A file of records containing relatively fixed or constant data which is periodically updated and maintained permanently or for a predetermined time. (Compare to File, Transaction.)

FILE STRUCTURE, INTEGRATED — Integrerad filstruktur

The organization and storage of data so that any data in the information system will be available to all activities of the system without duplicating the data in many different files.

FIXED RECORD LENGTH — Fast postlängd

Used to describe a file in which all records are the same length.

FIXED WORD LENGTH — Fast ordlängd

A term which refers to computers in which data are treated in units of a fixed number of characters or bits, as contrasted with Variable Word Length.

FLAG — Flaggning, Markering, Indicator

A character that signals the occurrence of some condition, such as the end of a word. Synonymous with mark, Sentinel, tag.

FLEXIBILITY — Flexibilitet

The capacity of an organization to suffer limited change without severe disorganization. Rigidity is the absence of this capacity. In a flexible organization the relations between the parts can be changed by the available environment by reaction without the destruction of the equilibrium. The condition of flexibility depends upon the internal constitution of the organization, i.e. upon the fact that its parts are independent to some extent. This makes growth possible.

Flexibility of a network is defined as a quantity F, where $0 \leq F \leq 1$, N is the number of nodes and C is the number of connections, or

$$\text{Flexibility: } \frac{C - N}{N(N-2)}$$

* FLOW CHART — Flödesschema, Flödesplan

A pictorial representation of information flow within a system, starting with all inputs and ending with the final output.

FLOW CONTROL — Flödeskontroll

In data communication networks which employ storage there is a possibility of congestion if more data flows, into a node than flows out of it. To remove this possibility, flow control is needed.

FOLLOW-UP — Uppföljning

After implementation, the analyst returns to observe actual operation of the installed system to find out if the system is really working as planned.

FUNCTIONAL PRINCIPLE — Funktionell tilldelning

The principle of arrangement that provides for the grouping of hardware items according to their functions.

GENERAL SYSTEMS DESIGN PROPOSAL — **Generellt system(utformnings)-förslag**

Specifies at a general level, how the proposed system will be effective. The General Systems Design Proposal is prepared to communicate to management and users in the organization how, at a broad level, the designed system will satisfy their requirements. It is the forerunner of the Final Systems Design Report. The following guidelines are offered:
1. Restate the reason(s) for initiating systems work, including specific objectives, and relate all original user requirements and objectives to the present systems design proposal.
2. Prepare a concise but thorough model of the proposed system design. Always try to include design alternatives from which management can make choices, rather than presenting only one approach. Not only does the presentation of alternatives allow management to choose, but often it can be shown that a different alternative will make a significantly different impact on the organization. Never get into a situation where it's all one particular design or nothing.
3. Show all of the resources required to implement and maintain the system.
4. Identify any critical assumptions or unresolved problems which may affect the final systems design.

GENERAL SYSTEMS THEORY (GST) — **Generell systemteori**

The theory of open-organic systems which possess certain characteristics such as organization, dynamic equilibrium, self-regulation, and teleology. Its main domain is growth and evolution of general systems.

A new discipline that provides background and theoretical underpinnings to the Systems Approach. Should rather be called General Systems Theories.

GENERAL SYSTEMS thinking (GSt) — **Generellt systemtänkande**

One idea inherent in General Systems thinking is to reverse the ongoing fragmentation and subdivision of the sciences into smaller, highly specialized areas through an interdisciplinary synthesis of existing scientific knowledge and current insights. Another facet of GSt is geared at introducing manageability and structuring of seemingly large-scale complex problems. Thus GSt includes rules-of-thumb for making operational distinctions between different problem classes:
1. unorganized simplicity
2. organized simplicity
3. organized complexity
4. unorganized complexity.

The first does not represent a system, and the second is seldom a problem.

GENERIC TREE — **Generiskt träd**

Index terms arranged by increasing or decreasing speficity (generality), for example, Human, Man, Boy, Larry.

GENUS — **Genus**

A class of similars divisible into two or more subordinate classes or species.

GOAL(S) Mål

An intermediate intended outcome of a subject A over a set of choice environments and a time-period t_1-t_k: the last outcome 0_k of a set of available outcomes. A goal, therefore, is an outcome that a subject intends most strongly over a set of environments and a time interval, and that is obtainable in these conditions.

A system may also have an external goal, such as reaching a target in space, or developing a relationship with any other system in the environment. Or it may have several goals at the same time.

If in an environment E an action A is directed towards a goal G, this implies:
1. That there exists a set V of hypothetical variations of the environment such that each member of V requires a specific modification of the action A if the goal-event G is to result.
2. The organism or machine at the time is so conditioned that if any of these variants had in fact been the case, the action A would have shown the required modification.

GOAL EFFECTIVENESS Måleffektivitet

We define goal effectiveness as the measure (or judgement) of how well the total corporate steering goals represent the total ultimate objectives.

GROUP REDUNDANCY Gruppredundans

Group redundancy consists of two functional groups of elements, only one of which is required for proper operation.

GROUPING Gruppering

The arrangement together of data of the same classification.

The kind of blocks of identification and index terms.

In scanning, the process of pulling out and putting together all records that meet specified criteria.

GROWTH (Till)växt

Action is occasioned by the available environment only in the case of insufficient and superfluous organizations. To act in response to the available environment, an organization must be able to grow. Such an organization which is capable of interaction is flexible. The ability to form relations is a condition of growth.

* HARDCOPY — Papperskopia, Beständigt dokument

The original document or a duplicate of it which can be read as is without special equipment.

HARDWARE — Hårdvara, Maskinell utrustning, Maskinvara

A symbol-receiving, -processing, and -communication device. Mechanical devices that augment man´s sensory and intelligence capacities.

HETERARCHY — Heterarki

A form of organization resembling a network or fishnet. Authority is determined by knowledge and function.

* HEURISTIC(S) — Heuristik

is derived from the Greek heuriskin meaning "serving to discover". A heuristic is an operational maxim. Ethical maxims provide a necessary and powerful pressure that forces us to consider whether our objectives are reasonable.

Heuristic models utilize logic, common sense and above all, past experience, to identify (diagnose) an environmental pattern and a prescription for treating it. These models replace the classical mathematical approach when such formal, analytical methods hold forth little promise of being operational.

Heuristic approaches involve sophisticated trial-and-error and do not lead to the same results invariably. A heuristic approach may be effective but not efficient; a satisfactory solution may be found by a very roundabout path. On the other hand, it may be an efficient method but with no assurance of optimality.

Suppose, that the system designer has an incomplete model for the environment, or that while he has a complete model this leads to algorithms which are too lengthy to be embodied in a real computer. If either circumstance prevails, then the directive in the system must prescribe a heuristic. This is a well defined procedure which, though likely to achieve the desired goal, cannot be guaranteed to do so. It is quite important to distinguish between an algorithm and a heuristic at a fundamental level.

HEURISTIC ROUTING — Heuristisk rotering

A routing method in which delay data produced by normal data-carrying packets coming in on different links from a given source node are used to guide the outgoing packets as to the best link for getting to that node.

HIERARCHICAL CODE — Hierarkisk kod

A code whose subject matter is in some way described in terms of level of detail. The single entry in the top level is the most general; the entries in the next level are the basic break-down of the top level; and each of these entries are in turn broken down to provide the next level. A familytree like structure results. A lattice is a cross-linked tree.

HIERARCHY — Hierarki

A specified rank or order of items.

A series of items classified by rank or order.

HIERARCHY OF NEEDS — Behovshierarki

Concepts that human needs can be arranged in ascending order and that satisfaction at one level is followed by desire for satisfaction at the next.

HIT — Träff

In a mechanized information storage and retrieval system, pertinent material that is retrieved.

HOMEOSTASIS — Homeostas

The regulation of variables important to the survival of well-being of an organism.

Relatively stable state of equilibrium or a tendency toward such a state, between the different but interdependent elements and subsystems of an organism of any kind.

* HOST COMPUTER — Värddator, Basdator

A computer which (in addition to providing a local service) acts as "host" to a communication computer (IMP) that gives it access to many other "hosts" via the network.

IDEOGRAM

Sign used to communicate a concept independently of the spoken word.

IMAGE — Bild

Between a stimulus, or cue, and the ultimate action that follows lies a filtering system, or "image". The image is a construct of relationships, experiences, values, and emotions. The image, or set of experiences, values, and so forth (relating to a particular event or thought) which has become integrated into that part of the central nervous system standing between stimulus and response, is a key element in cognitive behavior.

IMPERCEIVABLE SYSTEM — Oöverblickbart system

A system such that the number of its parts and their interrelations is so high that all its structure cannot be safely perceived or observed at one and the same time. For practical reasons we shall often say "systems" when in fact we mean "imperceivable systems".

IMPLEMENTATION — Genomförande, Förverkligande

Consists of the installation of the new system and the removal of the current system.

IMPRINT — Prägel

The place of publication, the name of the publisher and the date.

The title, author and other information stamped on the spine of a book.

INACTION — Inaktivitet

We need a theory that distinguishes between persistence and change; we need also a distinction between action and inaction. Just as most theories of choice fail to distinguish between persistence and change, they also fail to distinguish between doing something and doing nothing. "Doing nothing", in such theories, is simply a particular alternative of behavior that may be chosen or rejected in exactly the same way as "doing a particular something".

INACTIVE TIME — Inaktiv tid, Inaktivitetsperiod

The period of time when the item is available, but neither needed nor operating for its intended use.

* INDEX — Index, Innehållsförteckning, (Platsindex)

An ordered reference list of the contents of a file or document, together with keys or reference notations for identification or location of those contents.

A symbol or a number used to identify a particular quantity in an array of similar quantities; e.g. the terms of an array represented by X(1), X(2),.. X(100) have the indexes 1, 2, ..., 100 respectively.

INDEXING — Indexering

The task of relating information in a document to the procedure and methods of searching.

Deriving from a document a list of terms that indicate the contents of the document.

INDEX TERM — Indexterm

A word or phrase used to designate a concept.

* INDEX REGISTER — Indexregister

A temporary storage device, usually in the control unit, which is used primarily for modification of the direct address portion of an instruction. Index registers are also used for counting and looping.

INDEX TRACING — Termlistning, Spårlista

All of the index terms listed concerning one item.

INDIVIDUAL — Individ

Individual means literally not able to be divided or fractioned, in the sense of possessing integrity in its literal meaning of integratedness or wholeness. We shall not here be concerned with the reductive and quite obvious usage of individual as a distinguishable member of some class, i.e. as a particular embodiment of some set of characteristics or properties. A fallacy in much of set-theoretic exposition is overlooking the fact that a member of a given set -- an individual in this reduced sense -- is not necessarily exhausted by the set-properties, but may also be a member of one or more distinct sets other than the one under discussion. People are a lot more than, for instance, "consumers". An individual in the unreduced and more interesting sense is an essentially cognizing entity -- which is to say one that, without being so programmed by an already manifest cognizing entity, can generate percepts from environmental contacts and classify them. Thus a computer, requiring programming (including meta-programming) from a pre-existing cognizing human entity -- is not an individual in this larger sense. But in addition to cognizing in this essential and inherent sense, an individual also desires and hence feels; for no desire is possible without felt emotion or affect of some kind and degree. Hence the notion of individual is also bound up with that of future and of time, as well as with the notion of free choice and hence the ability to evoke determinations in the face of chance. Who does the determining has the freedom and the consequent expression of individuality. All our experiences perceptual, intellectual, and emotional, are states of our nervous activity.

* INFORMATICS — Informatik

is Information Science and Technology, defined as that systems science which includes: Structure and properties of information and communication as well as theory and methods for the transfer, organizing, storage, retrieval, evaluation and distribution of information, and furthermore information systems, networks, functions, processes and activities that mediate knowledge from source to user and are based on general systems, cybernetics, automation, and technology for human work environments in timely and current praxis.

* INFORMATION — Information

Any kind of knowledge or message that can be used to improve, or make possible a decision, or action. It should be noted that to interpret a recorded message requires decisions. Also, the interpretation is dependent on knowledge and is thus not only determined by the current recorded message which is to be interpreted but also on messages which have been received before.

Is data recorded, classified, organized, related or interpreted within context to convey meaning.

INFORMATION CENTER — Informationscentral

An organization which analyzes, synthesizes and/or evaluates and repackages the contents of documents for the purpose of enabling users to better assimilate the information of a specific field.

INFORMATION CHUNK — Chunk
(see CHUNK OF INFORMATION)

The smallest identifiable unit of task-required information which would lose its identification and meaning with respect to the task, if segmented further.

INFORMATION EXPLOSION — Informationsexplosion

A term used to describe the exponential growth of information

INFORMATION FLOW — Informationsflöde

The route taken by information (documents, data, feedback, statistics, etc.) whilst carrying out its function of controlling the manufacturing environment.

* INFORMATION RETRIEVAL (IR) — Informationsretablering, (-återvinning)

The final major function of information management software has to do with information retrieval. If a system is to a accept real-time queries against the data base, it is necessary to structure the files in such a way that the system can be immediately responsive to requests for information. Information management systems are beginning to borrow from the field of information retrieval. Information retrieval techniques have begun moving out of the field of library science and into business organizations as in important part of information management software.

In general usage information retrieval as a term is generic to all of the following:

- Data retrieval = the retrieval of a string of symbols in response to a query.
- Fact retrieval = usually the same as data retrieval, but what is a fact is highly subjective. A term to be avoided in careful discussion.
- Document retrieval = frequently a two-step opeation, involving retrieval of a datum or "fact" (such as a call number), then a very large symbol string, the document.

INFORMATION SCOUTING Informationsspaning

Locating unpublished material and keeping aware of who is working on what projects at what location.

INFORMATION SPECIALIST Informationsspecialist

One who analyzes, synthesizes, and summarizes the contents of documents and who specializes in a particular subject. Sometimes referred to as a literature research analyst.

INFORMATION STRESS Informationsstress

There are information stresses, including:
1. Information input lack or underload, resulting from a dearth of information in the environment or from improper function of the external sense organs or input transducers.
2. Injection of noise into the system, which has an effect of information cutoff, much like the previous stress.
3. Information input excess or overload.
Informational stresses may involve changes in the rate of information input or in its meaning.

INFORMATION SYSTEM Informationssystem

A system of information sets needed for decision and signalling in a larger system (of which it is a subsystem) containing subsystems for collecting, storing, processing, distributing, information sets.

An information system consists of six component parts. The heart of the system is the data bank (i.e. library) which stores information. A scanning device is needed to select inputs to the data bank. The scanning device might be programmed to monitor pre-selected variables (i.e. given stock exchange prices) or an input filter might be attached to it (i.e. a long range planning group) to accept or reject information. Each subsystem will use different criteria for accepting or rejecting depending on its own needs. Once the information is in the store, some type of retrieval mechanism is needed to find it again when required. Various indexing methods have been devised to effect this. But even if a piece of information is in store, can be retrieved and is relevant to a given decision, it may not be used because the decision taker does not know it is there. So an output filter must be designed to distribute information to those who can use it.

INFORMATION VERSUS DATA — **Information kontra Data**

We use "data" here to stand for "means for representing information". More specifically we shall define data to be plural of datum and "datum" to mean "a set of symbols to represent a part of a message". Notice that whereas the data representing a message carry information a single datum will not carry any information whatsoever.

"Data" is used to refer to perceived and symbolized events (syntactic information); "potential information" refers to meaning derived from data (semantic information); and "information" refers to the impact upon the receiver (pragmatic information).

In a broader time-and-content context of information there is:

Data = unevaluated messages
Information = data plus evaluation in a specific situation
Knowledge = data plus evaluation of future use in general.

INFORMATION VOLUME — **Informationsvolym, (-mängd)**

The amount of output generated by the processing of data as measured by characters, lines, or pages.

The amount of information to be moved within a given time period.

IN-LINE PROCESSING — **Direktbearbetning**

Processing data as put into the system, without presorting or batch.

IN-PLANT SYSTEM — **Lokalsystem, Privat system**

A system whose parts, including remote terminals, are all situated in one building or localized area. The term is also used for communication systems spanning several buildings and sometimes covering a large distance, but in which no common carrier facilities are used.

* **INPUT** — **Inmatning**

The data fed into the computer system, in the form of numbers or letters from media such as punched paper tapes, magnetic tapes, punched cards.

The device or set of devices used to bring data into another device.

Data transferred from auxiliary or external storage into internal storage.

* INPUT-OUTPUT (I/O) In- och utmatning, In-ut

A general term for the equipment used to communicate with a computer.

The data involved in such communication.

The medium carrying such data.

The activity of reading or writing such data.

INPUT TRANSDUCER In(matnings)transduktor

The sensory subsystem which brings markers bearing information into the system, changing them to other matter-energy forms suitable for transmission within it.

INQUIRY Förfrågan

Course(s) of action that produces a strengthening of belief in the efficiency of (an)other course(s) of action relative to some outcome(s).

To interrogate; to question; to make an investigation. In any search activity questions are asked. There are two general types of inquiries:
1. Those associated with the question, What is the problem(s)?
2. Those associated with the question, How do we go about solving the problem(s)?

* INSTRUCTION Instruktion

Although instruction may include conveying information, it is a multifunctional process designed according to a strategic plan, with the end purpose of modifying or changing behavior.

INTELLIGENT TERMINAL Programmerbar terminal

A terminal that is programmable and can process its messages, for example to check validity.

INTERACTION Interaktion

Interaction means that elements, p, stand in relations, R, so that the behavior of an element p in R is different from its behavior in another relation, R.

INTEREST PROFILE Intresseprofil

The words or terms that describe an individual´s field of interest.

* INTERFACE — Gränssnitt

1. A boundary between two pieces of equipment across which all the signals which pass are carefully defined. The definition includes the connector signal levels, impedance, timing, sequence of operation and the meaning of signals. The term has been extended to include the idea of a software interface. The essence of an interface is its accurate definition.
2. A common boundarey between two or more items of equipment. An interface may be mechanical - such as the physical surfaces and spacings in mating parts, modules, components, or subsystems - or electrical - such as the matching of signal levels or power levels of two or more subsystems.

INTERFACE COMPUTER — Gränssnittsdator

Part of a packet switching network which mediates between network subscriber and the highlevel or trunk network. It can be regarded as containing a local area switch and terminal processors.

INTERFACE MESSAGE PROCESSOR (IMP) — IMP

Interface Message Processor or IMP is the name of a data switching centre of the ARPA network. The network is sponsored by the Advanced Research Project Agency of the U.S.

INTERFIX (ROLE INDICATOR) — Rollindikator

A device to signal relationships between concepts. Thus for a series of compounds, A, B, C... insertion of the interfixes 1 and 2 (for example, A_1, B_1, B_2, C_2...) signals that the compounds with the same numerical interfix are in one mixture and those with a different one are in a different mixture.

* INTERROGATION — Utfrågning, Förfrågning

The user submits his inquiry to an access device or interface and the information will be returned in a relevant time period.

ITEM — (Beståndsdel, Enhet, Komponent

In an index, the reference to the document.

A unit of correlated information relating to a single entity such as: a person or a document; an object or a class of objects.

A generic term for a document or other information record.

Any information considered as a single unit for indexing purposes.

Information is generally in the form of some type of document such as a written piece of paper, a drawing, or a picture. Since a document can be described in so many specific ways, the word "item" has been applied to include anything which can be indexed.

ITEM, DATA — Data-item

A single character or group of characters which, when used in a certain context, convey meaning to the receiver.

A data unit which is complete within itself. Items are stored within one record on tape and may be further subdivided into fields.

ITEM MARK — Skiljemärke

A symbol or code used to separate data items from each other on the storage medium.

* KEY — Nyckel, Knapp, Tangent

That part of a word, record, file, etc. by which it is identified or controlled.

To code information.

A lever on a manually operated machine, as a key on a typewriter or a key punch.

KEY WORD — Nyckelord

Grammatical element which conveys the significant meaning in a document. Word indicating a subject discussed in document.

The most informative words in a title or document which describe the content of that document.

KNOWLEDGE — Kunskap

Coded information in a human brain. Knowledge is gained by the orderly loss of information, which is essentially the process described here as substituting the coded image for the data. By defining knowledge as patterns in human brains this model also coincides with Boulding's proposition that all knowledge disappears with the death of its holders, even though collections of signs from which knowledge can be extracted remain in libraries. The definition does not presume that other animals do not use substantially similar processes, even if they stop at lower levels of complexity; it merely ignores them as irrelevant to a model of man.

Is used in two different senses:
1. Awareness or possession of a fact or state of affairs (such as in knowing that someone is at home or that water is made up of hydrogen and oxygen).
2. Possession of a practical skill (how to).
Is an awareness of the efficiency of alternative subcourses of action when the relative efficiencies of the alternatives remain constant.

KWEST (Key Word Extracted as a String of Terms) — Nyckelord extraherat som termsträng

KWIC — Nyckelordet i sitt sammanhang

A acronym for Key Word In Context.

A technique for indexing documents based on Key Words which are shown in relationship to the other words.

KWOC (Key Word Out of Context) — Nyckelordet utryckt ur sitt sammanhang.

KWOT (Key Word Out of Title) — Nyckelordet utryckt ur titeln

LADDER — Stege

An arrangement of activities and events that describes a situation in which the work flows progressively along a series of activities. A ladder simplifies the situation and makes it easier to handle when analysing the network.

LATTICE — Gitter

A regular, symmetric network of interrelationships between specific subjects.

LIBRARY — Bibliotek

A collection of documents for study or reference.

An organized collection of standard, checked-out routines.

A set or collection of standardized programs by which frequently occurring types of problems may be solved. The library may be catalogued according to the type of arithmetical operation employed.

LIFE CYCLE (OF A SYSTEM) — Livscykel, Systemlivscykel

Most systems evolve through a set of successive stages from initial conception of the system idea to final cessation of system utilization. The set of stages is known as the system life cycle, and a high degree of commonality exists between the stages of development of different systems, especially in the area of computers, data processing, and information systems, e.g. eight stages:

1. Conception
2. Preliminary analysis
3. System design
4. Programming/Development/Implementation
5. System documentation
6. System installation
7. System operation
8. System cessation.

Stage numbered four, entitled "programming", relate to computer-based systems; if it were replaced by an activity generally known as "development" or "implementation", then the set of stages would apply to systems development activity in a general fashion.

LINE, DEDICATED PRIVATE — Privatlinje

A communications line that is assigned to the exclusive use of a particular company for its own activities. Such a line may be leased from a common carrier or constructed by the company itself.

* LINE SWITCHING — Linjeswitchning, Linjeväxling, Förbindelseförmedling

A switching technique whereby electrical connection is made between calling parties prior to the start of a communication.

The switching technique of temporarily connecting two lines together so that the stations can directly exchange information.

Switching in which a circuit path is set up between the incoming and outgoing lines. Contrast with message switching (q.v.) in which no such physical path is established.

* LINK — Länk(a)

A code which provides syntax to a group of terms.

In one sense it is the physical communication path between two "nodes" or switching centres. In a different sense it means a conceptual link between two parties in a packet switching network, signifying that they are in communication with each other. The "parties" may be subscribers, or processes within the subscribers computers.

* LINKAGE — Koppling, Länk(ning)

The interconnections between a main routine and a closed routine.

Entry and exit for a closed routine from the main routine.

LIVING SYSTEMS — Levande system

A special subset of the set of all possible concrete systems, composed of the plants and the animals. They all have the following characteristics:
1. They are open systems.
2. They use inputs of foods or fuels to restore their own energy and repair breakdowns in their own organized structure.
3. They have more than a certain minimum degree of complexity.
4. They have a decider, the essential critical subsystem which controls the entire system, causing its subsystems and components to interact.
5. They have certain other specific critical subsystems or they have symbiotic or parasitic relationships with other living or nonliving systems which carry out the processes of any such subsystem they lack.
6. Their subsystems are integrated together to form actively self-regulating, developing, reproducing, unitary systems, with purposes and goals.
7. They can exist only in a certain environment. Any change in their environment of such variables as temperature, air pressure, hydration, oxygen content of the atmosphere, or intensity of radiation, outside a relatively narrow range which occurs on the surface of the earth, produces stresses to which they cannot adjust. Under such stresses they cannot survive.

* LOG — Logg(bok)

A registry of items, e.g. an accession list.

LOGICAL RELATIONSHIP — Logisk relation

Some data in the system may be causally related to other data, some may be covariant, and some may be independent. This state of affairs frequently is seen in data generated by physical events.

MAIN ENTRY — Huvudingång

A full catalog entry, usually the author entry, giving all the information necessary to complete identification of a work. In a card catalog this entry bears also the tracing of all the other headings under which the work in question is entered in the catalog.

* MAINTAINABILITY — Underhållsförmåga, Underhållsgodhet

Maintainability is a characteristic of design and installation which is expressed as the probability that an item will conform to specified conditions within a given period of time when maintenance action is performed in accordance with prescribed procedures and resources.

Maintainability is the probability that, when maintenance action is initiated under stated conditions, a failed system will be restored to operable condition within a specified time. This implies that maintainability is a function of the equipment design, the operating personnel, and the support facilities. System maintainability can be improved by providing accessible test points, built-in test equipment, built-in diagnostic aids, training the operating personnel, and providing spare parts and equipment for incorporating repairs. Maintainability is a very important system parameter that must be considered at the start of the program.

* MAINTENANCE — Underhåll

All actions necessary for retaining an item in, or restoring it to, a serviceable condition. Maintenance includes servicing, repair, modification, modernization, overhaul, inspection, and condition determination.

MANAGEMENT CONTROL — Management-styrning

By means of the management control cycle, the enterprise is guided to predetermined objectives established by management in the strategic planning process. The estimates used in strategic planning are intended to show the expected results of the plan. They are neutral and impersonal. By contrast, the management control process, and the data used in it, are intended to influence managers to take actions that will lead to desired results.

MANAGEMENT INFORMATION SYSTEM MIS
(MIS)

1. An information network designed to provide the right information to the right person at the right time.
2. A system in which management or others having an established need to know are provided with historical information, information on current status, and projected information appropriately summarized. A decisionmaking tool.

MATCH — Matchning, Överensstämmelse

The comparison of records of one file with records in another to determine whether or not the same sequence exists in both files.

MEANING — Mening

is the significance of information to a system which processes it:, it constitutes a change in that system's processes elicited by the information, often resulting from associations made to it on previous experience with it.

* MEAN-TIME-BETWEEN-FAILURES (MTBF) Genomsnittlig/Medel-dödtid

The average length of time for which the system, or component of the system, works without fault.

Defined as the average value of the time intervals between successive failures of equipment. Its relationship is given by

$$\text{MTBF} = \frac{\text{Equipment operating time}}{\text{Number of observed failures}}$$

* MEAN-TIME-TO-REPAIR/RESTORE (MTTR) Genomsnittlig/Medel-reparationstid

When the system, or a component of the system, develops a fault, this is the average time taken to correct the fault.

Mean-time-to-restore equipment includes the time required to locate a failure and repair it.

MEDIUM — Medium

The physical substance upon which data are recorded, such as magnetic tape, punched cards, and paper.

A transmission path for energy.

* MEMORY — Minne

The subsystem which carries out the second stage of the learning process, storing various sorts of information in the system for different periods of time.

Procedure for the reproduction of a concept; not a store of data.

* MERGE — Samsortering, Samsortera

To combine items into one sequenced file from two or more similarly sequenced files without changing the form of the items.

* MESSAGE — Meddelande

An ordered selection from an agreed set of signs intended to convey information; the original modulating wave in a communication system.

A series of words, symbols, electrical impulses or holes intended to convey information.

As used in message switching, a message consists of a Header, the Text, and an End-of-Text Indicator.

A discrete amount of information which has been formulated by one person with the intent of its immediate or ultimate transmission to other persons or to himself; any recorded or transmitted information of any kind.

* MESSAGE SWITCH(ING) — Meddelande-växel, Meddelandeförmedling

The technique of receiving a message, storing it until the proper outgoing line is available, and then retransmitting. No direct connection between the incoming and outgoing lines is set up as in line switching (q.v.).

MICROCARD — Mikrokort

A term generally used for the type of microform which is opaque as opposed to transparent. These vary a great deal in size and reduction ratio.

* MICROFICHE — Mikrofiche, Mikrofilmkort

1. A unitized type of microform with a number of images arranged in rows on a transparent card.
2. A 4" x 6" sheet of microfilm usually containing copies of 58 standard 8 1/2" x 11 pages; any sheet of microfilm.

* MICROFILM — Mikrofilm

A continuous strip of film, usually either 16-mm or 35-mm, with all the "pages" placed in order. The film is usually placed on some type of reel for easy wind and rewind.

* MICROFORM — Mikroformat, Mikromedia

Any facsimile of material that is reduced in physical size so as to require special equipment to view it, as in the case of microfiche, microfilm, and aperture cards.

MISS — Missad information, Missat material

In an information storage and retrieval system, the relevant information that was not retrieved.

MISSION — Syfte, Uppdrag

A statement of what the system is to do to solve a given problem and when and where - an expression of purposes and objectives. It can be arbitrarily segmented in terms of identifiable beginning and end points. Mission determination involves many subjective or judgmental factors.

* MNEMONIC — Memonisk, Memoteknisk, (Memosymbol)

Assisting, or intended to assist, human memory. A mnemonic term is usually an abbreviation and thus should be easy to remember.

MODEL — Modell

Model can be defined as an explicit representation of some phenomenon or problem area of interest, including the various factors of interest and their relationship, and is used to predict the outcome of actions. A model is some analog or imitation of the real world. This definition, is a rather broad one, and so includes both qualitative and quantitative models.

Model is a representation of reality which abstracts the features of the situation relevant to the question being studied. The means of representation may vary from a set of mathematical equations or a computer program to a purely verbal description of the situation, in which judgement alone is used to assess the consequences of various choices. In systems analysis, or analysis of choice, the role of the model is to estimate the consequences of the choice; that is, the costs that each alternative will incur and the extent to which each alternative will attain the objective.

* MODEM — Modem

1. Contraction of modulator-demodulator.
2. A device which bi-directionally modulates and demodulates signals transmitted over communication facilities permitting two-way communications between sender and receiver.

MODULARITY — Modularitet

is the design of an information system as a number of small modules. Some modules are used only once in a single application; others are used in a large number of applications. The use of modules even in cases where each has a single purpose is desirable because it allows improved project control. The modules can be written and tested separately, allowing more efficient maintenance by identification of the boundaries of the system being changed. The use of modules is thus an application of system principles.

Allows for the addition of faster or more extensive equipment to an existing configuration without the need to replace the entire system.

MODULE (SUB-SUBSYSTEM) Modul

A combination of components contained in one package or so arranged that together they are common to one mounting, which provides a complete function(s) to the subsystem and/or systems in which they operate.

MOTIVATION Motivation

A complex phenomenon which refers to those things which cause us to move or act toward a goal. Motivation may be furnished by providing a situation where it is feasible to achieve certain physical, economic, or social goals, although all the aspects of man may interact to determine the resultant motivation.

All those inner striving conditions variously described as wishes, desires, needs, drives, and the like. A motive is an inner state that energizes, activates, or moves (hence "motivation"), and that directs or channels behavior toward goals. This results in and can be inferred from purposive, means-ends behavior.

MULTIDROP/MULTIPOINT LINE Multidrop-/flerpunkts-linje

Line or circuit interconnecting several stations or sites.

MULTIPLEX(ING) Multiplex(or)

1. The process of transferring data from several storage devices operating at relatively low transfer rates in such a manner that the high-speed device is not obliged to wait for the low-speed units.
2. The division of a transmission facility into two or more channels. In telephone and telegraph, the simultaneous transmission of several messages on the same circuit. In radio and television, the simultaneous transmission of two or more independent signals on the same carrier waves.

MULTIPLEXOR Multiplexor

A device which uses several communication channels at the same time, and transmits and receives messages and controls the communication lines. This device itself may or may not be a stored-program computer.

* MULTIPROCESSING Multi-bearbetning/-processkörning

The simultaneous execution of computer instructions by a machine with multiple arithmetic and logic units.

The simultaneous or interleaved execution of two or more programs or sequences of instructions by a computer system utilizing two or more central processing units.

* MULTIPROGRAMMING Multi(program)körning

The interleaved or simultaneous executive of two or more programs by a single computer.

The execution of two or more programs simultaneously by one central processing unit, through the overlapping or interleaving of their execution.

NET(WORK) Nät

Network is a distribution system composed of interlinked, spatially dispersed channels, subsystems and/or elements; but not all systems show a network structure i.e. the systems do not always have meshs or coils. The network can also be regarded as a distributing subsystem as part of some larger system.

Two or more libraries and/or other organizations engaged in a common pattern of information exchange, through communications, for some functional purpose. A network usually consists of a formal arrangement whereby materials, information, and services provided by a variety of libraries and/or other organizations are made available to all potential users. (Libraries may be in different jurisdictions but agree to serve one another on the same basis as each serves its own constituents. Computers and telecommunications may be among the tools used for facilitating communication among them).

NODE Nod

In a topological description of a network a node is a point of junction of the links. The word has also come to mean a switching centre in the context of data networks, particularly in the context of packet switching.

* NOISE Brus, Störning

Random electrical signals, introduced by circuit components or natural disturbances, which tend to degrade the performance of a communications channel.

Unwanted inputs to human or machine sense organs.

NOMENCLATURE Nomenklatur

The names of the classes of data, the units used, and the modifiers or qualifiers must all be expressed in a language common to the users and designers of the system. There must be no ambiguity in terms.

* NOTATION Notation, Skrivsätt

An arbitrary device to indicate the contents or location of a document.

OBJECT SYSTEM Objektsystem

System described or influenced by the information system. (Note: The information system itself also belongs to the object system.) When it is necessary to be distinct we shall call the system served by the information system the "managed system" or the "object system". We shall see that while even a specific piece of information is associated by people with a vague and, in general, undefined meaning, it will have a definite value for a managed system in a specified situation and it will have a meaning defined by the way it is treated by an associated information system.

OBJECTIVE(S) Mål(sättning), Huvudmål

A long-range intended outcome of a subject A over a set of choice environments and a time-period t_1-t_m: the last outcome 0_m of a set of outcomes $0_1, 0_2 \ldots, 0_m$. Thus an objective is a desired outcome that is not obtainable in the timeperiod being considered, but progress toward it is possible during that timeperiod, and it is obtainable at a later time.

A desired or needed result to be achieved by a specific time. It is a value sought by an individual or group. It is a specific category of fundamental purpose. An objective is a desired future state of a business or one of its elements. The time dimension of an objective is long-range, as distinguished from short range targets and goals. Objectives may be expressed for every element of an enterprise considered important enough to be the subject of plans. They may be expressed quantitatively or qualitatively, but usually, the more concretely an objective is expressed, the better. Structures of objectives are almost as diffuse as structures of purpose and philosophies.

A system has a purpose or objective. It is generally self-initiated, for a system achieves its goals by influencing the external environment or by modifying its relationship to the external environment.

Systems analysis is undertaken primarily to help chosse a policy or course of action. The first and most important task of the analyst is to discover what the decisionmaker's objectives are (or should be) and then how to measure the extent to which these objectives are, in fact, attained by various choices. This done, strategies, policies, or possible actions can be examined, compared, and recommended on the basis of how well and how cheaply they can accomplish these objectives.

OBJECTS Objekt

Objects are the parameters of systems; the parameters of systems are input, process, output, feedback-control, and a restriction. Each system parameter may take a variety of values to describe a system state.

OCCUPANCY (of a SERVICE FACILITY) — Beläggning

Proportion of time the service facility is in use.

* ON-LINE — On-line, Styransluten

The operation of input-output devices under the direct control of the central processor.

ON-LINE (COMPUTER SYSTEM) — On-line (system)

An on-line system may be defined as one in which the input data enter the computer directly from their point of origin and/or output data are transmitted directly to where they are used. The intermediate stages such as punching data into cards or paper tape, writing magnetic tape, or off-line printing, are largely avoided.

* ON-LINE PROCESSING — On-line bearbetning

The complete processing of data under the direct and absolute control of the central processing unit, eliminating the need for human intervention at any time between input and output. (Compare Off-Line Processing)

OPEN SYSTEM(S) — Öppet system

Concrete systems with boundaries which are at least partially permeable, permitting sizeable magnitudes of at least certain sorts of matter-energy or information transmissions to cross them. Such inputs can repair system components that break down and replace energy that is used up.

OPEN VERSUS CLOSED SYSTEMS — Öppna kontra Slutna system

A complex group of connected things or parts is a system and: Closed system is self-contained. Open system is in constant contact with, and is affected by, its environment.

Open systems exchange information, energy, or materials with their environments.

OPERATIVE INFORMATION — Operativ information

Operative information of local character, frequently calling for a message, i.e. each time a refill is required at one of the stock stations.

* OPTICAL CHARACTER RECOGNITION (OCR) — Optisk tecken-läsning/ -identifiering

The technique of using electronic devices and light in order to detect, recognize, and translate into machine language, characters which have been printed or written on paper documents in a human-readable form.

The conversion of human-readable language into a machine language.

OPTICAL COINCIDENCE SYSTEM — Optiskt koincidenssystem

Visual observation of the logical intersection of punched-out areas on cards. See Peekaboo card system.

ORGANIC STRUCTURE — Organisk struktur

Flexible organization that is structured to meet a situation of rapid or continual change.

OUTCOME(S) — Resultat

The product of an individual's or system's action. An outcome of an individual's or system's action is a change in that individual or system, or its environment, which is produced by that action.

Observations of results that occur when a specific strategy is employed and a particular state of nature exists.

OUTPUT TRANSDUCER — Ut(matnings)transduktor

The subsystem which puts out markers bearing information from the system, changing markers within the system into other matter-energy forms which can be transmitted over channels in the system's environment.

* PACKET — Paket, Datapaket

A block of data handled by a network in a welldefined format including a heading. A maximum size of packet is set, and messages longer than that size have to be carried as several packets.

PACKET SWITCHING NETWORK — Paketswitchat nät, Paketförmedlingsnät

A network designed to carry data in the form of packets. The packet and its format is internal to that network. The external interfaces may handle data in different formats, for example byte by byte.

PART — Del

One piece or two or more pieces joined together which are not normally subject to disassembly without destruction of designed use (e.g., tubes, resistors, transformers).

PEEKABOO CARD — Titthålkort, Genomsiktskort

A method by which each indexing term is represented by a card and each document containing information about that term is allocated a specific punched hole in the card. When two or more of the indexing term cards are aligned, only those documents that contain all the terms will allow light to pass through the holes. Sometimes referred to as an Optical coincidence system.

PERCEIVABLE STEP — Överblickbart steg

of systems analysis is the addition to a subsystem structure of a system, a perceivable set of subsystems, or a perceivable set of interactions.

PERCEPTION — Perception, Varseblivning

The role of perception is to provide information. This affects possible choices. The contributions of the senses, present and past, when believed or assumed become the raw material from which a model of the choice situation is constructed.

The process of interpreting stimuli in the environment. This involves classification of novel stimuli or novel combinations of stimuli, and the recognition of familiar stimuli, where the interpretation of the input is clearly connected with the process of recall. We can only perceive or recognise by means of some form of comparison between the input and what has previously been stored.

The immediate experience of organisms. It includes identifying, discriminating, recognizing, and judging objects by means of sensory information. Perception differs from cognition in its lesser emphasis on processes of thinking, deciding, choosing, and making inferences. There are five general characteristics of perceptual experience:
1. Immediacy: Our perceptual experience occurs as soon as we open our eyes or unstop our ears, apparently without any intervening steps of thought or interpretation.
2. Structure: We perceive objects or sounds as organized wholes, rather than as a collection of disparate elements.
3. Stability: We perceive objects as remaining the same from one moment to the next, dispite changes in their position or illumination.
4. Meaningful: We perceive objects in terms of our experience with them and in terms of their orderly relationship to other objects.
5. Selective: We attend only to certain stimuli and objects out of the many that we could perceive at any moment, and this attention is an active process of selection.

PERTINENCE — Pertinens, (Relevans)

Pertinence is a factor which relates a retrieved item to its question, entered in a way which allows ordering of either items or questions in relation to each other.

PHASE-IN CONVERSION — Infasning, Inkörning, Omläggning

Procedure in which parts of the new system techniques are interfaced in order to operate with the old system; thereafter those parts of the old system still remaining are replaced with the new system completing the conversion process.

PHASE-OUT Utfasning, Nedläggning

By some preplanned data the old system should no longer be operating. Phasing out can pertain to parallel conversion where the old and new system are operated simultaneously until the new system has been proven. The old is generally then phased out.

PILOT MODEL Pilotmodell, Prototyp

This is a model of the system used for program testing purposes which is less complex than the complete model, e.g. the files used on a pilot model may contain a much smaller number of records than the operational files; there may be few lines and fewer terminals per line.

PLAN(S) Plan(er)

The creation of a plan is a one-time effort followed by many other actions. The plan itself is a continuous effort and a part of a continuous cycle:

1. Plan
2. Decisions
3. Action
4. Disturbances
5. Measure
6. Evaluate
7. Plan

In a continuous cycle, the plan may be a dynamic element in the system. This does not mean that the overall plan is constantly adjusted but rather that a master plan will be adhered to with modifications as required in the control cycle.

Any complete description of behavior should be adequate to serve as a set of instructions, that is, it should have the characteristics of a plan that could guide the action described.

Plans are the steps, the activities, the tasks, the projects to be undertaken as a means of achieving the goals. Plans usually involve a time schedule and assignment of individual responsibility for accomplishing the steps to be taken. Plans may be set in reference to goals. However, plans are often set without reference to goals. Traditionally, most organizations utilize one or more types of plans, such as project lists.

PLANNING Planering

Something we do in advance of taking action; that is, it is anticipatory decision-making. It is a process of deciding what to do and how to do it before action is required. Planning is a process that involves making and evaluating each of a set of interrelated decisions before action is required, in a situation in which it is believed that unless action is taken a desired future state is not likely to occur, and that, if appropriate action is taken, the likelihood of a favorable outcome can be increased.

A key tool in the systems approach is planning. Management sets specific dates for the completion of action steps and defines who is responsible for them. Also, it carefully measures results against established objectives.

It is deciding in advance what is to be done. Planning necessarily precedes all action, if only in the mind of the person performing the action.

To "plan" is to produce a scheme for future action; to bring about specified results, at specified cost, in a specified period of time.

Intellective process of designing the outcome of the intervention before any action is taken: it must also mean the intellective pre-designing of the action so that the intended, the pre-conceived, result(s) will ensue.

PLURALISM Pluralism

Quality, state, or instance of being plural.

The doctrine that there is more than one kind of ultimate reality.

The belief that many events and existences are effectively independent of other events and existences for many practical purposes, and may profitably be treated as separate and essentially unrelated entities.

POLICY Policy, Handlings-/hållningslinje

Policies are general statements of intended behavior of the organization; they provide guidance for thinking and decision making within the framework of existing or anticipated resources. Policies tend to limit the scope within which decisions must be made and to assure that necessary decisions will contribute to the accomplishment of overall objectives.

Action guiding principle constructed to direct activities towards satisfactory goal fulfillment.

POSITIVE INFORMATION Positiv information

Information that is relevant and pertinent to the problem.

POST — Markera, Tilldela

To transfer an indicial notation from a parent or main entry to individual analytic entries; for example, to type the proper catalog entry and number at the top of a group of catalog cards.

(Coordinate indexing.) To put the accession number of a document under each entry representing a coordination term.

PRAGMATIC(S) — Pragmati(s)k

Pragmatism is a movement, founded by C.S. Pierce and William James, in which the meaning and validity of concepts are continually tested and reformulated by their cumulative, practical, and verifiable consequences.

For empirical or real systems, a crucial characteristic of the systems approach is that it yields an action-oriented result. The system must be feasible, producible, and operable. Systems activities are directed toward fulfilling a set of actual purpose or of real needs. The systems designers must gain a good understanding of the organization for which the work is being done. The personnel of the organization must become involved in the process of diagnosis, development, and design.

PREDICTION — Prediktion, Förutsägelse

The basic benefit of systems concepts and models is better understanding. The manager's job can be thought of as one of predicting the future consequences (the "entire" chain of effects) of choices made in current states.

The anticipation of an event, given the preceding event. Prediction can be regarded as a special case of decision making in which the optimum decision is that which predicts the next event correctly.

The management cycle starts with a forecast. This may concern predictions of basic parameters pertinent to the operation, such as sales, markets, and costs. It may also involve such things as statements of objectives, goals, policies, or technical changes.

PRESORT — Försortera

To arrange punched cards into large groups of similar items; the first stage in the sorting process.

* PROCEDURE — Procedur

is a precise step-by-step method for effecting a solution to a problem.

* PROCESS — Process, Behandla

Is often guided by a precise series of step-by-step instructions or procedures explaining how to carry out the processing.

Manifests change over time and produces a given result.

May include; compute, assemble, compile, interprete, generate etc.

PROCESSING — Bearbetning, Behandling

That activity in the input/output cycle which transforms the input into an output.

PROGRAM (in PLANNING) — Program

An ordered set of interrelated actions, generally more complex than a procedure, directed toward a specific (usually long-run) objective that is pursued only once; for example, a diversification or building program.

* PROGRAM (in COMPUTING) — Program

Is the specification for a process to be performed on data (p.g. an ordered collection of instructions and other data associated with the instructions).

Represents a plan, from input to output, for automatic problem solution, including the transcription of data, coding, result absorption, or alternate routines.

PROJECT MANAGER — Projektledare

A systems approach whereby one individual, the project manager, has full authority and responsibility over all people and activities within the project. This horizontal project organization implies extension of the project manager´s authority over all, within and outside the organization, involved in the project.

PROJECT PLANS — Projektplaner

Project plans are a combination of objectives, policies, procedures, budgets, and other elements necessary to carry out a predetermined specific objective. Project plans are the basic building elements of the organization's system of plans.

PROPERTY — Egenskap

PROTOCOL — Protokoll, Regel

A strict procedure required to initiate and maintain communication. Protocols may exist at many levels in one network such as link-by-link, end-to-end and subscriber-to-switch.

* PUSHDOWN STORE (STACK) — Stack (minne)

A store in which a chain of information of any length can be stored, whereby the sequence of access to the elements of the information chain is the reverse of the sequence of storing; the information stored last is the first to be called, (LIFO) last-in-first-out.

QUALIFIED HEADING — Kvalificerande rubrik

A heading followed by a qualifying term which is usually enclosed in parentheses, e.g. Composition (Art), Composition (Law).

QUALITATIVE DATA — Kvalitativa data

Data in a non-computational form which does not lend itself to direct arithmetic calculations.

QUEUE (SEQUENTIAL) — Kö

This is a group of items in the system waiting for the attention of the processor, and organized in such a way that the first item to gain attention will be the first one placed in the group, i.e., priority first-in-first-out (FIFO).

* RANK — Rang, (Nivåtal)

A measure of the relative position in a series, group, classification, or array.

REACTION — Reaktion

Reaction of an individual or system (x) is an event occurring to x that is caused by another event. The causing event may be a change in either x or its environment.

REALIZABLE SUBSYSTEM STRUCTURE — Realiserbar delsystemstruktur

is one where each of its subsystems and its interactions can be realized (implemented).

* REAL TIME (COMPUTER) SYSTEM — Realtidsystem

A real-time computer system may be defined as one that controls an environment by receiving data, processing them, and returning the results sufficiently quickly to affect the functioning of the environment at that time.

* REAL-TIME PROCESSING Realtidsbearbetning

The introduction of data to processing activities as the data originate, so that the result of the processing are immediately available to the user on a continuous basis, or at any time an inquiry is made.

Refers to information processing in any system that continually senses and responds to selected changes in the object environment, in a manner permitting the system to regulate and control some aspects of ongoing events in the system and its environment while they occur, within the bounds of minimal or acceptable levels of system performance, as determined by experimental tests.

RECALL Erinringsförmåga, Återvinning

is a re-presentation of a previous experience and a response to it - does not just happen. It is produced by something in the recall state. That something may be either an internal or external event. If this were not the case, our consciousness would be inundated by irrelevant memories.

is itself a response to at least one stimulus that operates in the present. Recall of a past reaction ordinarily, but not necessarily, involves recognition that the reaction took place in the past. In hallucinations this may clearly not be so.

is selective; it involves a search for the relevant. Otherwise everything stored would be recalled at once. Hence recall involves an association of something in the present to something in the past, and this association must be based on believed relevance - that is, on what the individual believes will enable him to make a better choice in the present.

The percentage of the relevant items stored in the system which are retrieved in response to a request. With relevance is meant the measure of the efficiency of an information system.

RECEIVER Mottagare

The target or destination in a communication system for which a message is intended.

RECIPROCAL ACTION; INTERACTION Växelverkan; Interaktion

Relationship and influence of the parts of a system (objects, people, etc.) to and on each other.

* RECORD (Data)post, Registrera, Spela in

A group of related data elements, sometimes called words.

Verb: The act of registering or entering data on some appropriate medium or document.

Noun: A group of related facts, data items, or fields of information treated as a unit.

RECORDING — Registrering, Inspelning

Initial collection and storage of data, as distinguished from subsequent reduction for ultimate use.

RECORDING MEDIA — Registermedia, Inspelningsmedia

Media capable of recording programs, storing them, then playing them back at later times or transporting them and playing them back at later times and at different places.

RECOVERY FROM FALL-BACK — Återhämtning, Räddning

When the system has switched to a fall-back mode of operation and the cause of the fall-back has been removed, the system must be restored to its former condition. This is referred to as recovery from fall-back. The recovery process may involve updating information in the files to produce two duplicate copies of the file.

REDUCTION — Reduktion

Summarization, ordering, formatting, statistical processing, and display of data, as distinguished from the prior process of recording and the subsequent process of analysis.

REDUNDANCY — Redundans

Over-specification. A method of achieving highsystem reliability with components of low reliability.

That portion of the total data contained in a message which can be eliminated without the loss of essential information.

The occurrence of a statement or elements of data more than once.

Redundance describes a state whereby the system contains superflous objects.

RE-EVALUATION — Omprövning

After implementation and follow-up, the analyst makes whatever changes are needed for the refinement and improvement of the new system. Some portions may be redesigned and others may be revised.

REFERENCE — Referens

A direction from one heading to another.

An indication referring to a document or passage.

REFERRAL — Hänvisning

Informing users as to the best source from which to acquire needed information.

REINFORCEMENT Förstärkning

Strengthening or influencing of learned behavior by appropriate feedback, such as knowledge of results, reward, punishment, or other conditioning in man or animals.

More recently, as selective feedback for self-organizing, computerized systems capable of some form of adaptation and learning.

RELATIONSHIP(S) Relation(er)

The bonds that link objects and attributes in the system process. Relationships are postulated among all system elements, among systems and subsystems, and between two or more subsystems.
1. Relationships may be characterized as first order, when they are functionally necessary to each other. Symbiosis, a first-order example, is the necessary relationship of dissimilar organisms; for example a plant and a parasite.
2. Relationships may be characterized as a second order if they are complementary, adding substantially to system performance when present, but not functionally essential. Synergy is a second-order relationship. Synergistic relationships are those where the co-operative action of independent agencies taken together produce total effects greater than the sums of their effects taken independently.
3. Relationships may be characterized as third order when they are either redundant or contradictory. Redundance describes a state whereby the system contains superfluous objects. A contradictory condition exists when the system contains two objects, which if one is true, the other by definition is false.

RELEVANCE (PRECISION) Relevans

The percentage of those items which are retrieved which are relevant to the request. In a given system, relevance and recall are inversely proportional to each other. (See Recall above.)

* RELIABILITY Tillförlitlighet

Reliability and availability are often confused concepts, but reliability is defined as the probability that a system will perform as expected for the duration of its mission, given that the system was initially in the "go" state. For a system with high duty cycle, in which the mean idle time is much less than the mean usage time, the mean repair time must be kept much less than the mean idle time or repairs will not be able to be made without significantly decreasing system availability.

This is standard attribute of equipment specified in most engineering plans. Reliability is a measure of the extent to which a piece of equipment or a system will respond to the same set of inputs in the same manner over a number of occurrences of these inputs. Reliability of data is a particular problem for information systems because of the number and complexity of transformations to which they are subjected.

Reliability is the probability of a device performing its purpose adequately for the period of time intended under the operating conditions encountered. Therefore, reliability can be viewed as a measure of successful system performance.

REPORT Rapport

Managers need communications systems or reports. These reports may be considered under the general headings of Planning, Control, and Operating reports. In order to exercise control, management also needs specifications of objectives, criteria for evaluation of performance, decision rules for corrective action, and a feedback system to evaluate the effectiveness of corrective action.

1. Planning reports evaluate the position of company or industry as compared to other comparable business entities. These reports include alternate courses of action available under a series of predetermined premises.
2. Control reports inform top management of operating performance as compared to predetermined performance standards.
3. Operating reports inform functional management of the current performance of operations within a given function. Normally these documents include a comparative analysis of current operations and operations for a previous period, as well as current performance as compared to predetermined detailed standards.

REPORT (STATUS) INFORMATION Rapport-/Lägesinformation

Information to the directive station about the system state at a set of system points (status information).

REPORTING — Rapportering

Reporting process is the communication of information relating to the conduct of the operation to other actors within (or in some cases, outside of) the organization. What is reported is necessarily an image of the operation. It might be termed a mapping of certain elements of the operation space onto the reporting space. The detail with which the reporting occurs may be perceived as the richeness of the image - i.e., the number of elements in the operation which are "mapped" onto the report.

RESPONSE — Respons, Gensvar

Response of an individual or system (x) is an event occuring to x that is coproduced by x and another event.

* RESPONSE TIME — Svarstid

Response time can be defined as the time interval required to perform an information-processing operation. The operation in question may involve the updating of a record.

The time interval between the initiation of a request of the information system and receipt of an answer.

* RESULT — Resultat

The most effective measure are of results. If results are too difficult, we take a step backward and measure activities. However, there is a gap between what one does and what one accomplishes. If activities are too difficult to measure, we take a second step backward and measure knowledge, skill and attitude.

The elements of a decision problem are structured to produce results, or outcomes, in problem situations. The outcome of a decision problem is a state of affairs which results as a consequence of the choice of a particular alternative and the occurrence of a particular set of environmental conditions. Outcomes are best assessed in terms of the degree of attainment of the decision maker's objectives. We shall assume that the objectives are "given".

RETRIEVAL and DISPLAY — Retablering och Presentation

The output of information and its forms of presentation to the receiver in an information system.

ROLE — Roll

A code designator which indicates the use of an individual term in the tracing list of a document.

A position or office which has specified rights and duties, e.g. manager or doctor.

ROUTING, ALTERNATE — Routeläggning(salternativ)

Assignment of a secondary communications path to a destination when the primary path is unavailable.

ROUTING TABLE — Roteringstabell

A table associated with a node which states for each packet destination the preferred outgoing link that the packet should use. Synonymous with "directory".

RULES-OF-THUMB — Tumregler

A judgment usually based on practical experience rather than on the result of scientific inquiry. But a rule-of-thumb can grow out of rigorous comparisons of data, actions, and ideas. Every manager develops rules-of-thumb to guide his actions, including convictions about personal strategies, policies, or principles. These are valuable laborsaving devices and, if developed with wisdom and insight, may be of fundamental significance in decision-making.

SATISFICING — Satisfiering

Satisficing is a remarkably useful term that was coined by Herbert A. Simon to designate efforts to attain some level of satisfaction, but not necessarily to exceed it. To satisfice is to do "well enough", but not necessarily "as well as possible". The level of attainment that defines "satisfaction" is one that the decision maker is willing to settle for. Satisficing planning begins with setting objectives and goals that are believed to be both feasible and desirable. Attribution of these objectives and goals is usually based on consensus among the planners. Objectives and goals are usually formulated by satisficers either in terms of commonly used measures of performance, or in qualitative terms. In the extreme the satisficer seems to operate on the principle that, if one cannot measure what one wants, one should want either what he can measure or does not want to measure.

Models of satisficing behavior are richer than models of maximizing behavior, because they treat not only of equilibrium but of the method of reaching it as well. Psychological studies of the formation and change of aspiration levels support propositions of the following kinds:
1. When performance falls short of the level of aspiration, search behavior (particularly search for new alternatives of action) is induced.
2. At the same time, the level of aspiration begins to adjust itself downward until goals reach levels that are practically attainable.
3. If the two mechanisms just listed operate too slowly to adapt aspirations to performance, emotional behavior - apathy or aggression, for example - will replace rational adaptive behavior.
The aspiration level defines a natural zero point in the scale of utility - whereas in most classical theories the zero point is arbitrary.

SCAN — Scanna, Genomsöka, Avsöka

To examine every reference or every entry in a file routinely as part of a retrieval scheme.

SCANNING — Genomsökning, Avsökning

The process of moving systematically through a set of data - file, record, or field - to locate data whose keys meet specified criterion.

SCIENTIFIC METHOD(S) — Vetenskaplig(a) metod(er)

Method utilizing the following steps: Observation, Formulation of a model, Testing the model, and Application or Implementation.

The scientific method offers an input-throughput-output algorithm for logical approach to empirical questions. This algorithm is usually described as the information flow through the following steps:

1. State or define the problem
2. Collect relevant information
3. Develop an hypothesis
4. Design and conduct an appropriate experiment (empirical test of hypothesis)
5. Analyse data or experimental results.

Step 5 is designed to lead to reformulation of the problem → the algorithm repeats. Such an ideal information flow procedure tends to behavioristically describe the rational-empirical process of scientific inquiry, but overlooks a significant cognitive factor in empirical information processing -- intuition.

* SEARCH — Söka, Sökning

To look over and through for the purpose of finding something; to explore; to inquire. To be curious is to be alive.

The mental and physical processes of looking for information. One culls one's memory for suggestions; analyzes concepts and employs one's creativity to try to collect purpose possibilities, problem definition possibilities, solution possibilities, and the like. In intellectual processing terms, one employs cognition, divergent and convergent thinking, with the cognition and divergent thinking being predominant.

SELECTION — Urval, Selektion

The act of choosing and taking from a number of alternatives; a taking from another by preference. Selection alone causes no effect on the selected energy or object.

SELECTIVE DISSEMINATION OF INFORMATION (SDI) — Selektiv Distribution/Delgivning av Information (SDI)

Matching an individual's interest profile against new material entering the information center and automatically informing him of the availability of the information.

SELF-ORGANIZING — Självorganiserande

Self-organizing system has rules of behavior that are determined internally but modified by environmental inputs.

Refers to any living or nonliving system exhibiting learning and adaptation.

Term describing computer-based systems that are capable of internal reconfiguration according to specified rules in response to selected external events.

SENSING — Avkänning, Sensning

Organizations are typically composed of small work units, or of groups of face-to-face individuals; and their environments are restricted to what the individuals can observe taking place around them, which can be quite limited. Therefore most units have little idea of what is happening outside the organization or even in other parts ot the organization, and operational correlation therefore requires an organizational "nervous system" which will keep units sensitized to occurences outside their immediate environment so as to ensure an integrated behavior. Other reaction patterns are also conducted by this system, including a classification of events for which the organization is already programmed but which require adjustment by certain subunits of the total organization. These messages flow from the sensory apparatus to the external-internal centralized control unit (or memory box), which selects the correct program, which, in turn, is communicated to the appropriate operations.

SENSOR — Sensor, Känndon, Givare

An element that originates all data input to the information-processing system. It includes both manual and machine-generated input. It reports the occurrence of an event within the physical system or within the environment.

SENTINEL — Sentinel, Avkänningstecken

A symbol identifying or indicating the beginning or end of a word, block, field or item.

SIGN — Tecken

A conventional symbol representing an idea, as a word, letter or mark; a motion, action, or gesture by which a thought is expressed or a command, or wish made known.

* SIGNAL — Signal

A sign, event or watchword, which has been agreed upon as the start for concerted action; signals announce the presence of things rather than serving as reminders of things.

SIMPLEX MODE — Simplex

Operation of a communication channel in one direction only, with no capability for reversing.

SINGLE ELEMENT REDUNDANCY — Enkel redundans

Consists of two elements that operate in parallel, only one of which is required for proper operation.

SINK — Sänka, Destination

A device which readily absorbs or draws energy and power from a source. For example, heat flows from a warm element (a source) to a cooler element (the sink).

SOFT COPY — Mjukbild, Temporärkopia

Presentation of information outputs by devices which ordinarily produce no permanent record.

SOFTWARE — Mjukvara, Programvaror

A set of computer programs, procedures, and possibly associated documentation concerned with the operation of a data processing system, e.g., compilers, library routines, manuals, circuit diagrams. Contrasted with hardware.

SOURCE — Källa, Ursprung

That from which an effect or energy proceeds; an origin.

An object, mechanism, or person responsible for the creation or organization of data.

The point at which data originated.

SOURCE DOCUMENT — Källdokument, Original

The original paper on which are recorded the details of a transaction.

Any document from which basic data are extracted.

The original medium upon which the details of a transaction were recorded.

SPAN OF CONTROL — Ledningsomfång, Styrvidd

Relates to the number of subordinates a manager can effectively supervise. Regardless of interpretation, span of control has significance, in part, for the shape of the organization which evolves through growth. Wide span yields a flat structure; short span results in a tall structure. Further, the span concept directs attention to the complexity of human and functional interrelationships in an organization.

Has received much attention, directed toward showing how restricting the span of control can improve executive effectiveness. Several writers have attacked the validity of the span of control in terms of its theoretical soundness. Herbert Simon finds fault with the principle in that it produces excessive red tape. Each contact between organizational members must be carried upward to a common superior - a needless waste of time and effort.

STATE — Tillstånd

The state of an entity changes from time to time as a result of actions taken on or by it. Such a change is referred to as a "state transition".

STATUS — Status, Tillstånd

Prestige, based on subjective examination.

State of an observed object or of a treated subject e.g. a patient, at a specific time.

STEERING EFFECTIVENESS — Styreffektivitet

is defined as the degree to which operating results fulfil the steering goals.

STORAGE (see STORING) — Lager

A device in which data can be stored and from which they can be obtained at a later time.

* STORAGE, ASSOCIATIVE — Associativ lagring, (-t minne)

A storage device in which storage locations are identified by their contents, not by names or positions. Synonymous with content addressed storage, parallel search storage.

* STORAGE, AUXILIARY — Tilläggs-/Extralager, Reservminne

A storage capacity which is additional to the main computer memory and which normally is capable of holding a larger amount of data then does the memory, but has a slower access time. Examples are magnetic disks and tapes.

* STORAGE CAPACITY — Lagringskapacitet/ Minnes-d:o

The amount of data that can be retained in the storage or memory unit of a computer, often expressed as the number of words or characters that can be retained.

* STORAGE, ERASABLE — Raderbar lagring (-t minne)

Media which holds data that can be changed, that is, the media can be re-used. Magnetic tapes, drums, or cores are examples.

STORAGE, EXTERNAL — Extern lagring

Storage devices - such as, magnetic tape or disks - physically separate from the computer. These devices hold data that is made available to the computer either through the direct connection of the device (e.g., a disk unit) or a unit that reads the device (e.g. a magnetic tape unit). (Compare Storage, Internal.)

STORAGE, NON-ERASABLE — Permanent lagring

Media used for containing data which cannot be erased and re-used, such as punched paper tapes and punched cards.

STORAGE, OFF-LINE — Fristående lager, Kallagring

A storage medium not directly under the control of the computer.

STORAGE, ON-LINE — On-line lager, Varmlagring

A storage medium directly under control of the computer so that data are available for processing when a request for a specific datum is made.

STORAGE, PARALLEL — Parellellagring, Dubbellager

Storage in which all bits, characters, or (especially) words are essentially equally available in space, without time being one of the coordinates.

STORAGE, PRIMARY — Primärlager

The storage that is an integral part of the computer and under its direct control.

* STORAGE, SECONDARY — Sekundärlager/-minne

A storage device under the control of the computer but not considered an integral part of the computer.

STORAGE, SERIAL — Serielagring, Sekventiellt minne

Storage in which time is one of the coordinates used to locate any given bit, character, or (especially) word.

STORAGE, STATIC — Statisk lagring

Storage such that information is fixed in space and available at any time.

STORAGE UNIT — Lagringsenhet

That portion of a digital computer in which data is stored. Sometimes referred to as computer memory.

* STORAGE, VOLATILE — Flyktigt lager, Obeständigt minne

Storage media such that if the applied power is cut off, the stored information is lost; e.g. acoustic delay lines, electrostatic tubes.

STORE AND FORWARD — Lagring för vidarebefordran

The interruption of data flow from the originating terminal to the designated receiver by storing the information enroute and forwarding it at a later time.

STORING (or STORAGE) — Lagring

An operation that changes the time location of an amount of energy or of an object. Storing always occurs at a location in space. Storing always involves selection of a space location at which an object is to be changed and application of energy to make the change.

* STRING — Sträng

A sequence of characters without regard to the internal structure of the sequence; a group of sequenced items in a sort.

STRUCTERM — Strukterm

A term or descriptor having an appended role code indicating context in which term is used (used by F.R. Whaley).

STRUCTURE — Struktur(era)

Structure comes from the Latin word struere: to build, and refers to what is built, and to the way the components of what is built are put together. The structure of a system is the set of components and relations between components making up the

The form, the arrangement of parts, the interrelationship of parts as dominated by the general character of the whole. Structured is having a definite structure, exhibiting organized structure or differentiation of parts.

Relationships of functions in an organization, arranged to accomplish the objectives efficiently. Structure implies system and pattern.

To put into structural form, to assemble; the basic action underlying the processing of knowledge and information. Structuring is a process carried out on a time scale. This process gradually produces the appropriate classes, relationships, and weights with which a problem is ultimately defined and solved.

STRUCTURE OF A SYSTEM — Systemstruktur

is the arrangement of its subsystems and components in three-dimensional space at a given moment of time. This always changes over time. It may remain relatively fixed for a long period or may change from moment to moment, depending upon the characteristics of the process in the system.

SUBGOALS — Delmål

The objectives of an organization can be split up into smaller contributory objectives called subgoals which are assigned to individual groups.

SUBJECT HEADING — Ämnesrubrik

A word or group of words indicating a subject under which all material dealing with the same theme is entered in an index or catalog or bibliography, or arranged in a file.

* SUBSYSTEM — Delsystem

Below the level of reference are subsystems, and below them subsubsystems. In every system it is possible to identify one sort of unit, each of which carries out a distinct and separate process, and another sort of unit, each of which is a discrete, separate structure. The totality of all the structures in a system which carry out a particular process is a subsystem. A subsystem, thus, is identified by the process it carries out. It exists in one or more identifiable structural units of the system.

Within the categories of physical and abstract systems, the ongoing process may be seen at many levels. The component processes necessary to the operation of a total system are known as subsystems. Subsystems in turn may be further described as more detailed subsystems. The hierarchy of systems or the number of subsystems are dependent only upon the intrinsic complexity of the total system. It is conceivable therefore, that some systems may contain an infinite variety of processes. Conversely, other systems contain a finite, limited number of processes. At each identifiable process the analyst may stipulate a system. Systems may operate simultaneously, in parallel, or in series without any restrictions other than those imposed by design or the real world.

SUBSYSTEM STRUCTURE — Delsystemstruktur

A partition of a system into a set of subsystems together with a set of interactions between the subsystems.

SUBTASK — Deluppgift, Underuppdrag

Actions fulfilling a limited purpose within a task.

SUPRASYSTEM OR SUPERSYSTEM — Supersystem, (överordnat)

Suprasystem of any living system is the next higher system in which it is a component or subsystem.

Supersystem (or suprasystem) is the larger system of which a given system is a component.

SURVIVABILITY — Överlevnadsförmåga

Regardless of whether the system is military or commercial, the derivation of system survivability is usually a complex function of many variables.

SWITCHING CENTER — Switch-centrum, Växelcentral

A location which terminates multiple circuits and is capable of interconnecting circuits or transferring traffic between circuits; may be automatic, semiautomatic or manual.

A location in a communication channel where incoming data from one circuit are transferred to the proper outgoing circuit.

SWITCHOVER — Skifte, Överväxling, Omskyffling, (Omlastning)

When a failure occurs in the equipment a switch may occur to an alternative component. This may be, for example, an alternative file unit, an alternative communication line or an alternative computer. The switchover process may be automatic under program control or it may be manual.

* SYMBOL — Symbol

Any pattern produced by a person (system) in a medium external to himself that corresponds in some way to an internal pattern. A sign is one kind of symbol.

That which suggests something else by reason of relationships, association, or convention; a written or printed mark, word or emblem used to represent or stand for an object or idea; in writing or printing, a conventional sign such as a character, a letter or an abbreviation used instead of a word, or words, as in mathematics, physics, chemistry, music, phonetics, etc. to represent operations, quantities, spatial position, elements, relations, qualities, sounds. etc.

SYNERGY — Synergi

The power of several groups working together to produce disproportional results, the whole being greater than the sum of the parts; often expressed as 2 + 2 = 5.

SYNTHESIS Syntes

Synthesis comes from the root meaning "to put together", and consists of the composition of parts or elements so as to form a whole. Synthesis may be thought of as the opposite of analysis. For example, in electric network analysis, one is given a combination of circuit elements (the system) connected in a specific fashion and is asked to determine circuit performance (the output) when connected to an electric source (the input). In the converse problem of network synthesis, one is given the circuit performance desired and asked to find that combination of circuit elements whose performance will closely approximate the desired performance when the input is applied.

SYSTEM System

A set of interrelated elements, each of which is related directly or indirectly to every other element, and no subset of which is unrelated to any other subset. Hence, a system is an entity composed of at least two elements and a relation that holds between each of its elements and at least one other element in the set. The elements form a completely connected set that is not decomposable into unrelated subsets. Therefore, although a system may itself be part of a larger system it cannot be decomposed into independent subsystems.

A collection of objects, called parts, which are correlated in some way. In the physical systems it is common to have the correlation between the parts in the form of some sort of physical connections. In the mathematical model of such a system, which is the object of the theory, however, the connections occur just as relations, and as all kinds of relations are usable we have chosen to state the definition in the more general way from the beginning. Note that this definition implies that a mathematical model of a system is, itself, a system.

A set of interacting units with relationships among them. The word "set" implies that the units have some common properties, which is essential if they are to interact or have relationships. The state of each unit is constrained by, conditioned by, or dependent on the state of other units. The units are coupled.

A collection of interacting, diverse elements which function (communicate) within a specified environment to process information in order to achieve one or more desired objectives. Feedback is essential. Some of its inputs may be stochastic and a part of its environment may be competitive.

* SYSTEM ANALYSIS — Systemanalys

A methodology for analyzing and solving decision problems through a systematic examination and comparison of alternatives on the basis of the resource, cost and the benefit associated with each.

The process of determining the objectives of the system and of defining the components, operations, and procedures by which it either achieves those objectives or could achieve them more efficiently. It involves four steps:
1. Definition of objectives
2. Analysis of processes
3. Design of alternatives
4. Evaluation.

In systems analysis, as opposed to natural science, but much like engineering design, there usually is a further purpose:
1. To establish the nature of the model's response to change in the values of the endogenous variables under conditions of fixed values of the exogenous variables.
2. To determine what changes to the values of the endogenous variables, made in response to uncontrollable shifts in the values of the exogenous variables, will best maintain the measure of effectiveness (or other output measures) at or near some desired value.

SYSTEMS APPROACH — Systemgrepp, Systematiskt angreppssätt

(= ANASYNTHESIS) — (= Anasyntes)

Systems methods applied to practical engineering problems are now intrinsic facets of our technology. These are largely pragmatic, even intuitive, and have grown through trial and error in the face of complex, previously unmanageable problems. Thus, in many ways, the systems approach is one of conceptual problem solving, an attitude or ability to perceive wholes, different levels, and interrelationships, rather than a formal regimen! It cannot be said that practice usually follows the general systems theory; on the contrary, theory often has been derived from observation of, and experience with, reallife problem areas and cases. The large-scale systems methods employed so far can thus be said to be more rational, empirical, and observational than experimental.

Systems approach is the opposite of the often used problem-solving approach of "cutting the problem down to size". It recognizes that "things" - be they organizations, factories, highways, or whatever - are made up of components, each of which have unique properties, capabilities and mutual relationships. The overall output of the system is the most significant thing to the systems designer and planner. He "looks at the big picture" (the overall system), rather than focusing on its constituent parts.

(forts...)

(forts.)

Systems Approach — Systemgrepp, Systematiskt angreppssätt

Assume that you have a situation which is concerned with a need or involves a problem. The systems approach asks you to do the following steps:

1. Goal definition or problem statement
2. Objectives and criteria development
3. Systems synthesis (Alternative)
4. Systems analysis
5. Systems selection
6. Systems implementation.

These are the logical steps of systems design, but rarely can they be performed in this order. Logically, one must formulate the problem before one solves it. In fact, one performs both functions simultaneously throughout the systems design process. The design of any system is extremely iterative, with the designer proceeding from problem fomulation to solution to problem reformulation and so on, with each cycle producing a more refined, better understood system.

A methodology that predicates solving the larger system problems with solutions that satisfy not only the subsystems objectives, but also the global system´s survival. This methodology takes a holistic approach to problems of complex systems. It is an on-going dynamic cybernetic fluid process of redesign toward a new system; thus systems approach is the antithesis of systems improvement.

SYSTEMS DESIGN — Systemutformning

1. The design of some man-machine combination to carry out a needed set of operational tasks.
2. A plan, procedure, and/or description of a new system which will supplant or improve upon an existing system.
3. The art of developing a new system. Ten steps outlined portray the design cycle. It is concerned with the coordination of activities, job procedures, and equipment utilization in order to achieve organizational objectives.

SYSTEM ENGINEERING METHOD — Systemingenjörsmetod

Engineering methods to insure realization of system design objectives, reliability, and performance.

SYSTEM, PROPOSED — Föreslaget system

The newly developed system designed to replace the existing (current) object systems.

SYSTEMS SCIENCE — Systemvetenskap

General systems science is a multidisciplinary approach to the study of complexity, which by synthesizing systemic findings from the natural, social, technological, behavioral and life sciences, and other specialized fields, brings holistic perspectives to the solution of problems within a general and global cultural context.

Generalized application of experimental method in operationally specified system settings; it draws freely from pure and applied sciences and from interscience as needed throughout the evolution of object systems.

SYSTEM TESTING — Systemtest

Refers to experimental measurement of system performance in a credible test setting involving an adequately large complex of the men, equipment, and data-processing facilities of the object system, so that results can be used to make generalizations regarding current and future system effectiveness.

Experimental measurement of system performance, in a credible test, setting, involving an adequately large complex of the men, equipment and data-processing facilities of the object system, so that results can be used to make verifiable generalizations regarding current and future system effectiveness.

SYSTEMS THEORY — Systemteori

Underlying the systems approach are the methods of science. Science provides theoretical structures (their validation increasing with time) upon which we can construct practical solutions to problems. The structure is the skeleton, and the data provide the flesh that fills out the form. Different data may yield different forms, but the theory provides the mold. Relevant theory for the systems approach may be drawn from any discipline as required, and systems theory itself is based on many disciplines.

SYSTEM TRAINING — Systemträning

Training of an organizational team as a unit, in a credible system environment, with relatively immediate feedback of performance effectiveness, in accordance with a long-range plan featuring new situations and increasing difficulty levels to move the organization toward peak performance.

* TABLE — Tabell

A collection of data, with each item being uniquely identified, either by some label or by its relative position.

* TABLE LOOKUP — Tabellslagning

A computer search to obtain a function value corresponding to an argument, stated or implied, from a table of function values stored in the computer.

The operation of obtaining a value from a table.

TABLEDEX INDEX — Tabellindex

A coordinate book-form index developed by R.S. Ledley. Terms are arranged in tables with document numbers and associated term numbers in ascending number sequence.

* TAG — Märkning, Markering, Bihang, (Tagg)

A unit of information which is a unique member of a restricted set used for the purpose of denoting some quality of associated information.

TAXONOMY — Taxonomi

The science of classification. Also, the study of the names and naming of items in generic assemblies.

TELECOMMUNICATIONS — Telekommunikation

The transmission of signals over long distances, such as by telegraph, radio, or television.

TELECOMMUNICATION MEDIA (TELEMEDIA) — Telemedia

Electronic media capable of transmitting programs across distance in real time.

TELECONFERENCE — Telekonferens

Conference in which participants are at different locations but communicate as if they were in the same room by means of telephone, television, or shared computer displays at individual stations.

* TELEPROCESSING — Fjärrbearbetning, Fjärrdatabehandling

A form of information handling in which a data processing system utilizes communication facilities.

TELETYPE (TTY) — Teleskrivare

A system for transmitting messages over a distance, employing keyboard or papertape sending and printed-media receiving units.

A series of different types of teleprinter equipment such as transmitters, page printers, reperforators, etc., utilized for communication systems.

TELEX SERVICE — Telex

A dial-up telegraph service enabling its subscribers to communicate directly and temporarily among themselves by means of start-stop apparatus and of circuits of the public telegraph network. The service operates world wide. Baudot equipment is used. Computers can be connected to the Telex network.

TERM — Term

A word used in an index.

In an index, the subject heading or descriptor.

A term is used to describe an item for the purpose of storing it in or retrieving it from a storage and retrieval system. Whether or not we assign the concept of "term" to a single word or allow it to stand for a phrase, a set of words, or even an abstract, is arbitrary. However, it is necessary to distinguish a term, considered as a unit description of an item, from a set of terms considered as a set of descriptions of an item. Hyphenated words, and in some languages the complete freedom to combine any words into one, create a difficulty here. Nevertheless, a common sense distinction between a term and a set of terms usually is evident.

Descriptor, variable, aspect, concept, characteristic, attribute, talent, parameter, value, data.

TERMINAL — Terminal

Any device capable of sending and/or receiving information over a communication channel. The means by which data are entered into a computer system and by which the decisions of a system are communicated to the environment it affects. A wide variety of terminal devices have been built, including teleprinters, special keyboards, light displays, cathode tubes, thermocouples, pressure gauges and other instrumentation, radar units, telephones, walkie-talkie-lookies, etc.

A point in a communications network at which data can either enter or leave.

An input-output device designed to receive or send source data, as part of a data transmission system.

Equipment for user-communication with a computer, which is not under the control of the computer operator. Usually remote from the computer, on the user's site; requires special software in the computer.

TERMINAL PROCESSOR — Terminalprocessor

In a packet switching network it is convenient to treat terminals like other processors needing communication. To this end, each terminal has a process looking after it. This can be regarded as residing in a terminal processor (a separate processor is not essential - it could be part of an interface computer, for example).

TERMINAL INTERFACE PROCESSOR (TIP) — TIP

TIP, Terminal Interface Processor i.e. a terminal IMP.

TEXT — Text

The part of a message which contains the substantive information to be conveyed. It is sometimes referred to as the body of the message.

THESAURUS — Tesaur

A lexicon, more especially where words are grouped by ideas; a grouping or classification of synonyms or near synonyms; a set of equivalent classes of terminology, for the purpose of vocabulary control.

A set of words defining the user language of an information system generally associated with a synonym list, a word frequency list and a set of associative rules.

THINKING — Tänkande, Tankeprocess

is an operation, and what it operates on are concepts, images, and signs of these. Meanings are contained in beliefs about consequences of courses of action that can be taken, and beliefs are expressible in sign complexes that are statements or propositions. The product of the process is either a conclusion that is believed and hence becomes a basis for selecting a course of action, or a conclusion that can be tested (tried, observed, and evaluated).

TIME — Tid

is the fundamental "fourth dimension" of the physical space-time continuum. Time is the particular instant at which a structure exists or a process occurs, or the measured or measurable period over which a structure endures or a process continues.

TIMELINESS — Tidsenlighet, Punktlighet

A major attribute of many elements of a system. If event A takes ten minutes to occur and cycles continuously, data about event A more than ten minutes old are not timely, although they may be useful as history.

* TIME-SHARING — Tid(s)delning

Makes possible simultaneous direct-access to a data base.

A method of operation in which a computer facility is shared by several users for different purposes at (apparently) the same time. Although the computer actually services each user in sequence, the high speed of the computer makes it appear that the users are all handled simultaneously.

Use of a device for two or more purposes during the same overall time interval accomplished by interspersing component actions in time.

TITLE ENTRY — Ingångsrubrik, Titelingång

The record of a work in a catalog or bibliography under the title.

TRACING — Spår, Referens-/Termlista

In a card catalog, the record in the main entry card of all the additional headings under which the work is represented in the catalog. Also, the record on the main entry card or on an authority card of all the related references made. In coordinate indexing, a list of the descriptors, Uniterms, etc., applied to a specific document.

TRANSDUCER — Transduktor, (Omformare)

Transducers are devices for the analogous transformation of one form of energy into another. This transformation occurs directly or indirectly by controlling a generator of the second form of energy by means of the form of energy to be transformed.

TRANSCEIVER = TRANSRECEIVER — Transceiver, Sänd- och mottagarenhet

A terminal that can transmit and receive traffic.

TRANSDUCTION — Transduktion

Transduction is an interface between user needs and hardware requirements. The specification of this attribute is done in the naming of the type of mechanism (lantern slide, cathode ray tube, computer line printer, etc.) for converting data contained in a form not recognizeable by human beings into one which is. This specification is dependent not only upon the nature of the rest of the structural system but also upon the types of formats needed.

TRANSFORM — Transformera, Omvandla, Omforma

To derive a new body of data from a given one according to specific procedures, often leaving some feature invariant (e.g. "meaning").

TRANSFORMATION — Transformation, Omvandling, Förvandling

A modification or change of the physical form of the data so that they may be handled by different machines.

The derivation of a new body of data from another set, according to specific procedures prescribed in advance.

TRANSLATION — Översättning

The conversion of data from one form of representation to another form without significantly affecting the meaning.

TRANSMISSION — Transmission, Överföring

The movement of data from a point called the source to one or more points called the receiver, by either physical or electrical means.

An electrical or electromagnetic process whereby a properly encoded message may cross space to a decoding apparatur in real time.

TRANSITION — Övergång

The act of change.

TROUBLESHOOTING — Avhjälpning, Felförekommande, Räddning

Locating and diagnosing malfunctions or breakdowns in equipment by means of systematic checking or analysis.

* TURNAROUND TIME — Omloppstid

In computing operations, the elapsed time between arrival of a computation job and its completion in the form of usable results.

ULTIMATE DESIRES — Ultimära önskemål/önskningar

Before we could possible define the ultimate objectives we must define which ultimate desires are relevant and important to the organization. The distinction here is that "goals" or "objectives" (as commonly used) refer to states that we decide or attempt to reach.

ULTRAFICHE — Ultrafiche, Ultramikrokort

One of the newer types of photoreduction onto microform. Similar to microfiche in that it is transparent; but because of the method of reduction, many more frames can be "packed" onto a single 4x6 inch or 3x6 inch transparency.

UNDERESTIMATION — Underskattning

People tend to underestimate the complexity of an imperceivable system, i.e. the number of parts and relations it contains.

UNDERSTANDING — Förståelse, Förståelseprocess

is responsiveness to whatever affects efficiency. If, when a change occurs in the environment or the subject to reduce, the efficiency of his behavior, he modifies his behavior so as to increase his efficiency; then he is said to understand what has happened.

Successful thinking involving the creative modes of the image filter. The output of the feedback loop is interpreted broadly to include understanding, action, and other constructs flowing through the same loop, or alternately, understanding implies disintegration (creation of doubt) of existing concepts.

UNIT — Enhet

Any combination of parts, subassemblies, and assemblies mounted together normally capable of independent operation in a variety of situations (e.g. power supply, converter). A unit is normally accessible and can be removed without disassembly or removal of other equipment items.

A combination of parts constituting a definable entity of a component, possessing a functional potential essential to the proper operation of that component.

UNITERM INDEXING — Uniterm indexering

A form of index display developed by Mortimer Taube which utilized single descriptors, called Uniterms, to define a document, and which facilitates the manual coordination of these descriptors.

UNIVERSAL DECIMAL CLASSIFICATION (UDC) — Universella decimalklassifikationen (UDK)

An expansion of Dewey Decimal Classification with more minute subdivisions started by P. Otlet in Brussels, sometimes referred to as the Brussels system.

* UPDATE — Uppdatering, Ändring, Aktualisera

To process a file according to a specified procedure for inserting, deleting or altering items.

To modify a master file with current data from a transaction file according to a specified procedure.

VALIDATION — Validering

Testing the accuracy of a modul by making it simulate a period of past time.

VALIDITY — Validitet

of information is a measure of the degree to which the information represents what it purports to represent. Suppose we develop an index that we say represents the efficiency (output/input) of a system. We may then find out that the index is also influenced somewhat by cost and some expternal economic factor. The fact that the index actually measures (and is influenced by) factors other than what we want to measure lowers its validity.

* VARIABLE(S) — Variabel

A measurable quantity which has a definite numerical value at every instant.

The quantitative characteristics which are measured on a continuous numerical scale, e.g. length, weight, voltage.

Variable is a single numerical factor which could assume different values within the system considered.

VARIABLE WORD LENGTH — Variabel ordlängd

The number of characters used for an item of data is exactly equal to its length, whether short or long. Item marks are used to indicate the end of a data item. Contrasted to Fixed Word Length.

VARIETY — Variation

In cybernetics, the total number of possible states of a system, or of an element of a system. The Law of Requisite Variety (Ashby's Law) expresses the fact that "only variety can absorb variety": a regulating system must be able to generate as many states as the system regulated.

Consider the case in which the subsystems of the environment are connected unrestrictedly in direction, so that feedbacks occur between them. This type of environment may vary according to the amounts of communication (variety) that are transmitted between subsystem and subsystem. Two degrees are of special interest as types:
1. Those in which it is near the maximum - the richly joined environment.
2. Those in which the amount is small, poorly joined environment.

VERIFY — Verifiera, Bekräfta

To check, usually by machine, one set of data against another to minimize human error in data transcription.

* WORD — Ord

A group of signs; a single articulated sound or a group of articulate sounds or syllables uttered by a human voice and by custom expressing an idea or ideas.

A sequence of bits or characters occupying one addressable computer location, treated as a unit, particularly in storage transfer operations.

In computing, an arbitrary number of binary digits or bytes handled as a unit by the computer for the purposes of operation, transmission, and storage.

* WORD LENGTH — Ordlängd

The number of bits or characters comprising a word.

The number of bits or characters handled as a physical unit, by the computer.

WORD LEVEL INDEXING — Ordnivåindexering

Indexing by words or terms as opposed to concepts.

WORD MARK Ordmarkering

A symbol or code used to separate one group of bytes from another.

To define the limits of a set of characters taken as a unit.

WORKABLE SUBSYSTEM STRUCTURE Fungerande delsystemstruktur

A subsystem structure such that the properties of its subsystems together with its interactions result in the properties specified for the system as a whole (=the global properties of the system).

* WRITE Skriva

To record data in a storage medium.

To copy data from one type of storage to another.

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